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LEADERSHIP AND EMPLOYEE DEVELOPMENT

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LEADERSHIP AND EMPLOYEE DEVELOPMENT

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CONTENTS

INTRODUCTION

> 'And more than ever before is the demand for competent men in excess of the supply.' ... 'It is only when we fully realize that our duty, as well as our opportunity, lies in systematically cooperating to train and to make this competent man, instead of in hunting for a man whom some one else has trained, that we shall be on the road to national efficiency.' (Taylor, 1914, p.6).

The need for competent employees is of all ages. Through their efforts, work processes become successful and high-value–added products are created. Successful organizations rely on them to anticipate and react continuously to an ever-changing organizational environment (Argyris & Schon, 1974; Senge, 1990).

Continuous developments such as globalization, technological advancements, new legislation, transforming labor markets, product innovations, and changing customer demands redefine by what practices organizations can be successful. Through anticipation and adaptation, work processes and jobs change, and employees at all levels have to deal adequately with these changes. These changes may be so strong that firms today cannot promise lifelong careers, implying that more and more employees have to progress their careers across organizations (Arthur & Rousseau, 1996; Bridges, 1995; Hall & Mirvis, 1995a, 1995b). The result is that employees not only need knowledge and skills for their present jobs, but they also have to learn continuously to maintain and improve their professional skills for changing tasks and for future jobs (Argyris, 1993; Argyris & Schon, 1974; Holman, 2005; Howard, 1995; London & Mone, 1999; Rainbird & Fuller, 2004; Senge, 1990; Thayer, 1997).

In the present study, we regarded employee development as employees' active engagement in many forms of learning and training, on-the-job as well off-the-job, that takes a longer-term perspective than typical training provisions, and that extends into career planning and reviews of personal

progress (Birdi, Allan, & Warr, 1997). Learning activities may be differentiated on several overlapping dimensions. Activities may be distinguished that are voluntary or non-voluntary, are performed in work time or in non-work time, and have a short-term focus (the learning of specific knowledge, skills, or behaviors that employees need in their current jobs) or a long-term focus (developing and preparing a route for developing the knowledge, skills, or behaviors needed for jobs to come) (Birdi et al., 1997; Noe, Wilk, Mullen, & Wanek, 1997). Activities may be formal (structured activities initiated and sustained by the organization) or informal (unstructured activities initiated by the employees like socialization and adjusting to new workplaces) (Chao, 1997; Sonnentag, Niessen, & Ohly, 2004). Learning activities may take place in off-the-job training settings or educational programs (Ford, 1997; Salas & Cannon-Bowers, 2001; Sugrue & Kim, 2004) or on-the-job (Eraut, Anderton, Cole, & Senker, 1998; Rainbird & Fuller, 2004) through activities such as role changes and job transitions (Ashforth, 2001; Ashforth & Saks, 1995), starting up new operations (Dechant, 1990; McCall, Lombardo, & Morrison, 1988), and working on special assignments or challenging novel tasks (McCauley & Hezlett, 2002; McCauley, Ruderman, Ohlott, & Morrow, 1994; Ruderman, Ohlott, & McCauley, 1990). All these activities are relevant to updating, adjusting, and developing knowledge and skills, and these activities were the focus of the present study.

Direct leaders may be helpful in guiding employees' development (Birdi et al., 1997; Colquitt, LePine, & Noe, 2000; Kozlowski & Farr, 1988; Kozlowski & Hults, 1987; Noe, 1996; Tharenou, 2001a), and they may do so even more effectively than mentors (Raabe & Beehr, 2003; Scandura & Williams, 2004). Employees see direct leaders as an important information source (Ashford, 1993; Ashford & Tsui, 1991), which enables direct leaders to provide employees with information for reflection on work and to help employees in understanding work and organizational processes. Also, by planning and structuring tasks, delegating work, and facilitating and motivating employees (Yukl, 2002), direct leaders may stimulate employees to try things out in practice. In addition, direct leaders may take on a

mentor role to guide and facilitate employees' development through supporting their careers (Allen, Poteet, Russell, & Dobbins, 1997; Raabe & Beehr, 2003; Scandura & Williams, 2004). Although it is understood that leader support is an important factor for employee development, most researchers have used general measures of leader support, obscuring what exactly leaders should do to guide employee development effectively.

Since Livingston (1969) proposed that leaders' expectations of employees are the lever of employees' performance and development, a large body of research has shown that leaders are especially willing to invest in an employee when they have high expectations of that employee (Eden, 1990, 1992, 1993). High expectations initiate a self-fulfilling prophecy effect: leaders act in such a way that the high expectations become true. This is also called the Pygmalion effect. Meta-analytic studies have shown that the Pygmalion effect can be fairly strong in organizational settings (Kierein & Gold, 2000; McNatt, 2000).

Eden (1990) proposed a model describing the Pygmalion effect in the workplace that may improve our understanding of leaders' guidance of employee development; see Figure 1. According to this model, leaders employ a better leadership style with the employees for whom they have higher expectations. A better leadership style refers to a leadership style that has more positive consequences for employees' attitudes and behaviors that benefit the organization and the employees. Better leadership styles have both an indirect and a direct effect. Indirectly, employees recognize the better leadership style and interpret this as meaning that they are worth investing in, which increases employees' self-expectations. Higher self-expectations cause greater motivation and increased effort, leading to better performance, higher achievements, and more employee development. This further raises employees' self-expectations. The better leadership style also has a direct effect through a better facilitation of employees' work, with higher achievements and more development as a consequence. During evaluations, leaders notice that the subordinates of whom they had initially high expectations make the expectations come true, and leaders' expectations rise. The same model

applies to leaders' low expectations; leaders' low expectations have detrimental effects on employees' self-expectations, achievements, and development (Babad, Inbar, & Rosenthal, 1982; Oz & Eden, 1994).

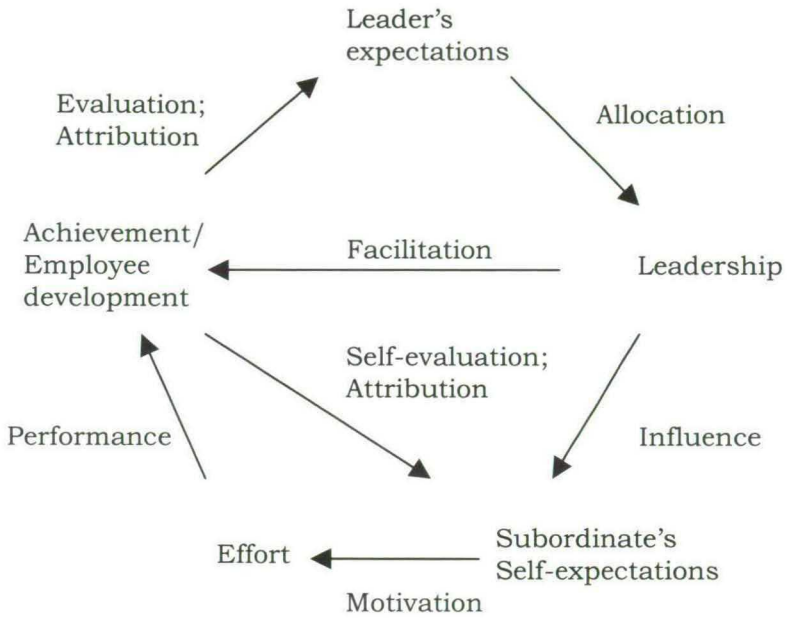


Figure 1: Self-fulfilling prophecy at work.

Despite the many studies and its potential to improve understanding of leaders' guidance of employee development, some crucial questions regarding the Pygmalion effect remain unanswered. For example, (1) we do not know for sure whether the Pygmalion effect also applies to specific behaviors such as employee development; (2) it is unclear what exactly leaders do differently when they have high expectations compared to having low expectations; and (3) it remains to be seen whether leaders' expectations are fixed or changeable in existing relationships.

The goal of the present study was to gain insight into how leaders may guide employees' development behavior effectively. To attain this goal, we investigated several topics concerning leaders' guidance of employee development, that were inspired by the Pygmalion model. It was expected that achieving this goal would lead to the drawing up of recommendations for leaders' effective guidance of employee development and to a better

understanding of leadership and, more particularly, the Pygmalion effect in organizations. Several questions guided this study:

1. Which employees engage in development activities?
2. Do leaders' expectations relate to employees' development behavior?
3. What leadership characteristics relate to leaders' expectations?
4. How do these leadership characteristics relate to employee development?
5. What conditions affect the relationship between leadership characteristics and employee development?
6. How stable are leaders' expectations of employees; can these expectations be changed?

We aimed to answer these questions by conducting several empirical studies. All studies referred to leader-employee relationships at an operational level. Each study is described in a separate chapter and can be read as an independent paper. The papers presented in Chapter 1 to Chapter 6 have been submitted for publication.

In the study reported in C*hapter 1*, we tested whether the Pygmalion model applied to employees' development behavior. We particularly examined what leaders do differently when they have high expectations compared to having low expectations, and what leadership characteristics relate to employee development.

In the study reported in *Chapter 2,* we looked at personal determinants of employee development to find out which employees engage in development activities. It was argued that employees with high (personal) initiative, who have an active and self-starting approach to work that goes beyond what is formally required in a given job, engaged more often in development activities. We investigated whether (1) personal initiative is positively related to self-efficacy (individuals' beliefs in their capabilities to be successful) and attitudes toward development activities, (2) these three variables together with social pressure to engage in development activities are positively related to employee development, and (3) high-initiative employees act less upon social pressure than do low-initiative employees.

In the study presented in *Chapter 3*, we addressed the complexity of the relationships between organizational support and employee development and between leader support and employee development. Several conditional variables for these relationships were examined. We tested job satisfaction as one of the moderators, because dissatisfied employees may use the support to leave the organization. We assumed also that leader support and organizational support reinforce each other. Moreover, we investigated whether support has different relationships with employee development for employees who differ in their levels of self-efficacy.

In the study reported in *Chapter 4*, we looked at the quality (trust, respect, and feelings of obligation) of the relationship between leaders and employees as a moderating condition for the effectiveness of leaders' guidance of employee development. We investigated whether the relationship between leaders' feedback, goal-setting, and employee development varied for interpersonal relationships of different quality.

In the study described in *Chapter 5*, we investigated how leaders' guidance of employee development affects employees. We examined the part of the Pygmalion model that states that leaders affect employees' performance through employees' self-expectations. We hypothesized that employees' self-efficacy mediated the relationship between various leadership characteristics and employee development.

In *Chapter 6*, we report a quasi-field experiment that was focused on enhancing leaders' expectations. We aimed to determine whether in existing relationships leaders' expectations of employees are fixed or can be changed through training leaders.

In the study reported in *Chapter 7*, we conducted some additional analyses to see whether some of the major findings regarding leaders' guidance of employee development refer to employee development only or whether these findings are also relevant to other attitudes and behaviors of employees.

Finally, in *Chapter 8*, we sum up the major findings of the series of studies conducted, and we discuss the answers we found to the questions that were formulated in the present introduction.

Before we conducted the empirical studies presented in the following chapters, some preliminary studies had been carried out on data collected from four organizations (N = 760) to validate the measurement instrument. These preliminary studies are not reported in the following chapters. During the period 2002 - end of 2004, the validated measurement instrument was deployed in seven organizations. In order to control progress, some chapters were written before the data collection of the final organization was complete. Therefore, we used data from six out of seven organizations for the studies presented in the first two chapters (N = 904), and we used the data from the seven organizations for the studies presented in Chapter 4 and Chapter 5 (N = 1112). Data for the study presented in Chapter 3 (N = 1867) originated from three out four organizations that provided data for the preliminary studies and the six organizations that supplied data for the studies presented in the chapters 1, 2, 4, and 5. The data from the first of two measurements used in the study presented in Chapter 6 (N = 79) were also used for the studies presented in the other chapters. During the process of data-collection, we measured additional variables in four organizations. The study presented in Chapter 7 was based on data from these four organizations (N = 768).

PYGMALION AND EMPLOYEE DEVELOPMENT: LEADERSHIP CHARACTERISTICS MEDIATING THE RELATIONSHIP BETWEEN LEADERS' EXPECTATIONS AND EMPLOYEE DEVELOPMENT

In a world of fast internal and external organizational changes, organizations may benefit from investment in the quality of personnel by stimulating employee development (Argyris & Schon, 1978; Hall & Mirvis, 1995a, 1995b; London, 1989; Senge, 1990). Employee development is defined as an employee's active engagement in many forms of learning and training, on-the-job as well as off-the-job: it may take a longer-term perspective than typical training provisions do, and it extends also into career planning and reviews of personal progress (Birdi, Allan, & Warr, 1997). Research suggests that leader support is an important determinant of employee development (Birdi et al., 1997; Kozlowski & Farr, 1988; Kozlowski & Hults, 1987; Noe, 1996). Since Livingston (1969) proposed that leaders' expectations (leaders' perceptions that an employee will probably behave in a certain manner) are the lever of employee performance and development, several studies have shown that leaders allocate and distribute their investments in employees in accordance with their expectations of each employee individually (Eden, 1990; Kierein & Gold, 2000; McNatt, 2000). This may imply that, as in the mentor-protégé relationship (Allen, Poteet, & Russell, 2000), employee development depends on leaders' expectations, as a result of which some employees may develop themselves more than others. This self-fulfilling prophecy effect of leaders' expectations that result in leaders' behaviors that make the expectations come true is called the Pygmalion effect (Eden, 1990; 1992; Livingston, 1969; Rosenthal & Jacobson, 1968).

Meta-analytic analyses of the Pygmalion effect have shown a fairly strong effect (Kierein & Gold, 2000; McNatt, 2000). Many of those Pygmalion studies took place in military organizations and in training settings. Most studies of leaders' expectations have been experimental in nature; expectations were manipulated to assess their effect on the

performance of employees through leadership behaviors. However, the measurement of leadership characteristics that potentially mediate the relationship between leaders' expectations and employees' performance has been limited to general measures of leader support (Dvir, Eden, & Banjo, 1995; Eden & Shani, 1982; Oz & Eden, 1994, Tierney & Farmer, 2004). Leadership constructs found in the leadership literature, such as leader-member exchange (LMX) relationships, inspirational leadership, and goal-setting, have largely been ignored.

In the present study, we addressed the following question: what leadership characteristics relate to leaders' expectations, and which of these leadership characteristics relate to employee development? The present study is especially relevant for several reasons. For the first time, the role of leaders' expectations in employees' development was investigated. The largely ignored mediation effects of various leadership characteristics were tested using both employees' and leaders' perceptions. More insight into these characteristics contributes to a better understanding of the Pygmalion effect in organizations and of ways to stimulate employee development. Moreover, the present field study contributes to the generalization of the Pygmalion effect to civil organization settings and complements the many training studies and studies in military organizations (Kierein & Gold, 2000; McNatt, 2000). Finally, the findings of the present study are helpful in constructing training programs for leaders (Eden, 1990, 1992) and in improving the effectiveness of previous Pygmalion training courses (Eden et al., 2000).

Mediating Leadership Characteristics

Research in the educational setting might be informative regarding leadership characteristics that mediate the relationship between leaders' expectations and employee development. Based on self-fulfilling prophecy studies, Rosenthal (1973, 1) classified teacher behaviors that mediate the relationship between teachers' expectations and students' performance, and listed four factors:

1. 'teachers appear to create a warmer socio-emotional climate for their "special" students;

2. teachers appear to teach more, and more difficult, material to their "special" students;
3. teachers appear to give greater opportunities for responding to their "special" students;
4. teachers appear to give more differentiated feedback to their "special" students as to how these students have been performing'.

Harris and Rosenthal's (1985) meta-analytic study revealed positive relationships between teachers' expectations and these four factors, and between these four factors and the behavior of students.

Most of these factors appear to be quite close in meaning to leadership characteristics frequently cited in the literature, and these leadership characteristics may mediate the relationship between leaders' expectations and employee development. First, a warm social emotional climate resembles a high *LMX relationship*, i.e., a relationship of trust, respect, and obligation between leader and employee (Graen & Uhl Bien, 1995). Positive affective feelings are part of a high LMX relationship (Bauer & Green, 1996; Liden & Maslyn, 1998; Liden, Wayne, & Stilwell, 1993). Second, the teaching of more, and more difficult, material implies that students have to acquire a higher level of knowledge and skills. Each step in the learning process requires that students meet higher goals. This means that teachers use an implicit form of *goal-setting*. According to goal-setting theory, the setting of specific and difficult goals leads to better performance (Locke & Latham, 1990, 2002). Third, offering students more opportunities to respond enables them to check whether their cognitive resources or their behavioral repertoire meet the requirements. As a result, students obtain more opportunities to learn. By *providing time and resources,* leaders may increase learning opportunities. Finally, teachers' feedback can be compared to *leaders' feedback*: leaders' differentiated provision of information about employees' performance and development.

In the present study, we hypothesized that these leadership characteristics mediate the relationship between leaders' expectations and employee development. Goal-setting was split into specific goals and

difficult goals. For reasons discussed later in this section, these characteristics were supplemented with *inspirational leadership*. Figure 1 represents the research model. All mediating variables are discussed below.

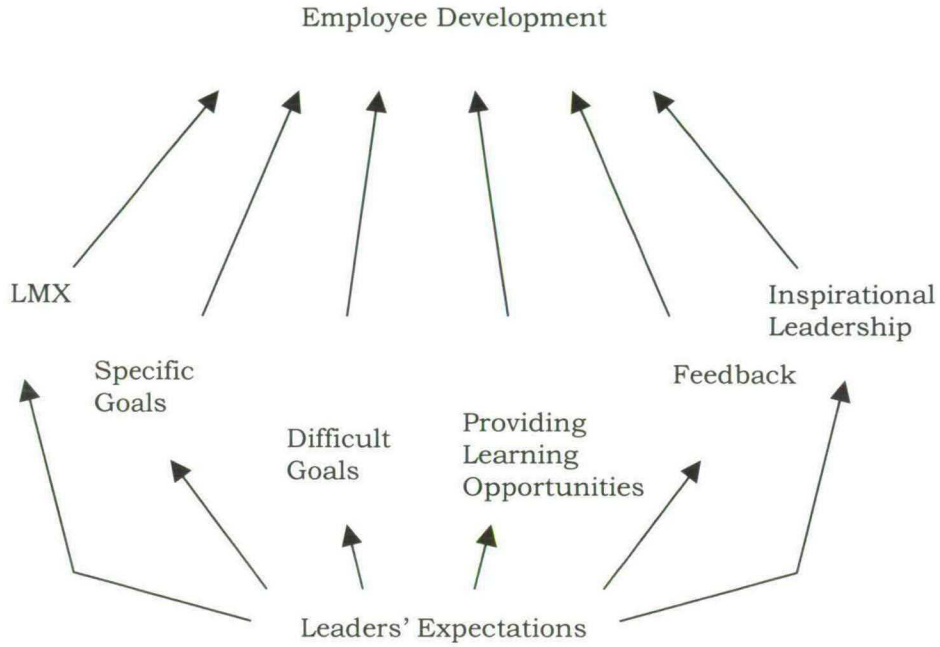


Figure 1: The Hypothesized Model.

LMX

LMX studies have shown that leaders treat their employees differently from one another, based upon the leaders' evaluation of each employee (Dansereau, Graen, & Haga, 1975; Graen & Scandura, 1987; Graen & Uhl Bien, 1995; Wayne, Shore, & Liden 1997). A positive evaluation results in a high LMX relationship of respect, trust, and obligation. In such a relationship employees perceive warm social emotional feelings toward their leader (Bauer & Green, 1996; Liden & Maslyn, 1998). In the first few days of working together, leaders already form an opinion of an employee, which affects the LMX relationship six months later (Liden, Wayne, & Stilwell, 1993).

The positive consequences of a high LMX relationship are diverse. In comparison with employees in low LMX relationships, employees in high LMX conditions have higher levels of satisfaction with their leaders and their work, more organizational commitment, more role clarity, better job performance, and higher member competence. Moreover, employees' levels of role conflict and turnover intentions are lower (Gerstner & Day, 1997). It is suggested that the concept of social exchange (Blau, 1964) and reciprocity (Gouldner, 1960) are the underlying mechanisms of these positive outcomes (Settoon, Bennett, & Liden, 1996; Uhl Bien & Maslyn, 2003; Wayne et al., 1997). In relation to employee development this implies that for employees in the high LMX condition, leaders invest valuable resources in their acquisition of knowledge, skills, and expertise, with positive consequences for these employees' careers, and the employees in a high LMX relationship may reciprocate by developing the skills that the organization needs. In several studies, positive relationships were found between LMX and the development of employees (Graen & Scandura, 1987; Graen, Wakabayashi, Graen, & Graen, 1990; Wakabayashi & Graen, 1984; Wayne et al., 1997). The first hypothesis was as follows:

> *Hypothesis 1: LMX mediates the relationship between leaders' expectations and employee development.*

Goal-setting

Research has shown that more specific and more difficult goals result in better performance through directing actions and promoting greater persistence, more effort, and the use of more profound cognitive strategies (Locke & Latham, 1990, 2002). High self-expectations result in more difficult self-set goals (Locke & Latham, 1990; Locke, Motowidlo, & Bobko, 1986). It might be argued that when a leader expects an employee to perform well, the leader chooses more difficult goals for that employee. Berlew and Hall (1966) argued that employees pick up cues about the expected quality of performance and internalize these expectations as personal goals to blend into the organizational social system and to find their organizational identity.

Employee development can involve both simple (e.g., learning just one additional task) and complex tasks (e.g., working towards another position). Meta-analyses (Wood, Mento, & Locke, 1987) have shown smaller goal-setting effects for complex tasks than for simple tasks, which may be due to indecisiveness about the right goal strategy for the complex tasks (Earley, Connolly, and Ekegren, 1989) and to a lack of (automatic) strategies to solve these complex tasks (Kanfer & Ackerman, 1989). Reformulating the difficult goals for complex tasks as specific challenging learning or mastery goals reestablishes the goal-setting effect (Winters & Latham, 1996; Seijts & Latham, 2001; Seijts, Latham, Tasa, & Latham, 2004). A learning goal shifts attention from task outcomes to finding and implementing the right strategy and procedure to complete the task (Seijts, Latham, Tasa, & Latham, 2004). Learning goals are especially effective when a person's ability is not sufficient for high-standard performance, as in the case of employee development. Thus, for employee development, it is important that goals are set as learning goals that may be split up into sub-goals to create a stepwise learning process. These goals should be specific and difficult to induce the goal-setting effect. We hypothesized the following:

> *Hypothesis 2: Setting specific learning goals mediates the relationship between leaders' expectations and employee development.*
>
> *Hypothesis 3: Setting difficult learning goals mediates the relationship between leaders' expectations and employee development.*

Providing learning opportunities

Various situational conditions not under the control of individuals may influence their behavior by providing constraints and opportunities (Blumberg & Pringle, 1982; Campbell, Dunnette, Lawler, & Weick, 1970; Campbell & Pritchard, 1976; Peters & O'Connor, 1980). Leaders are able to shape employees' situational conditions by allocating time, resources, and responsibilities, and by doing so leaders may create learning opportunities

for employees. Greater opportunities are probably created for the employees leaders believe in. Leana (1986) showed that leaders delegate responsibilities and decision-making authority in accordance with their expectations.

Learning opportunities which leaders may allocate as they wish come in different forms. Obviously, the possibility to receive training or follow a course contributes to employees' knowledge and skills. On-the-job activities may also provide learning potential, such as being given challenging job assignments (McCauley, Ruderman, Ohlott, & Morrow, 1994), being a member of special task forces, undergoing job transitions (Ashforth & Saks, 1995; McCall, Lombardo, & Morrison, 1988; Nicholson, 1984; Stewart, 1984; West, Nicholson, & Arnold, 1987), and starting up new operations (Dechant, 1990; McCall et al., 1988). These activities confront employees with novel situations that require learning new or updating existing routines and behavior. We hypothesized the following:

> *Hypothesis 4: Providing learning opportunities mediates the relationship between leaders' expectations and employee development.*

Feedback

The logic of providing feedback is simple: a person needs to know the state of affairs in order to get closer to a preferred state. This seems to apply to the concept of employee development, which focuses on getting better 'worker' qualifications. However, meta-analytic research (Kluger & DeNisi, 1996) showed a small overall effect of feedback on performance, and positive, negative, and non-existent effects were almost equally distributed over the total sample of studies, even when the effect was controlled for (positive or negative) feedback signs. A small effect seems to apply also to the relationship between feedback and employee development. Bailey and Fletcher (2002), for example, found a positive effect of multiple-source feedback on employee development, whereas the study by Maurer, Mitchell, and Barbeite (2002) resulted in only a few relationships between diverse sources of 360-degree feedback and

development attitudes and behavior. This evidence led us to expect a positive relationship between feedback and employee development, which may be due to the employee being told that he/she has not reached a desired developmental stage, and how this can be obtained. The hypothesis was as follows:

> *Hypothesis 5: Feedback mediates the relationship between leaders' expectations and employee development.*

Inspirational leadership

Although inspirational leadership is not part of the Pygmalion effect in the classroom, Eden (1990, 1992) associated the Pygmalion leadership style with inspirational leadership theories, such as those of charismatic and transformational leadership. Inspirational leaders appeal to the values and ideals of their followers (Bass, 1985; Burns, 1978; Den Hartog, 1997), and inspirational leadership is positively related to followers' motivation, performance, group cohesion, empowerment, and commitment (Bass, 1998; Conger & Kanungo, 1988; Den Hartog, 1997; Fuller, Patterson, Hester, & Stringer, 1996). According to Bass (1985), transformational leadership encompasses both charisma and the Pygmalion effect. Leaders with high expectations are seen as charismatic. They convey confidence in employees and their performance in such a way that the employees' self-esteem, enthusiasm, and efforts to fulfill the leaders' expectations are increased.

Dvir, Eden, Avolio, and Shamir (2002) tested the impact of transformational leadership on follower development and performance in a field experiment. The results confirmed a positive impact of transformational leadership on followers' development and performance. The hypothesis was the following:

> *Hypothesis 6: Inspirational leadership mediates the relationship between leaders' expectations and employee development.*

In sum, to find an explanation for the relationship between leaders' expectations and employee development, we hypothesized that LMX,

specific goals, difficult goals, providing learning opportunities, feedback, and inspirational leadership each mediate this relationship.

Method

Sample and Procedure

Data were collected from 904 employees and their leaders (N = 209). The employees worked for different Dutch organizations: a health care institution (N = 302), a police department (N = 188), a penitentiary (N = 156), a social service organization (N = 102), a security service organization (N = 94), and a vocational training school (N = 62). The organizations were selected because they paid, to some extent, attention to employee development. The number of employees rated by each manager ranged from 1 to 10 (M = 4.33). The employees ranged in age from 17 to 65 years (*M* = 39.86 years, *SD* = 9.36 years), and 44% were men. On average, the employees had 14.56 years of education (SD = 2.27). A person normally starts school at the age of 4, and may have completed university 18 years later.

The management of the participating organizations sent a random sample of employees a letter inviting them to participate in the study. The letter explained that the purpose of the study was to obtain information about the employee's satisfaction with the organization and his/her leader. The letter also emphasized confidentiality. During the following week, the employees received the questionnaire, a letter of instruction, and a return envelope. Upon return of the questionnaires, the direct leaders of the respondents were requested to fill out a questionnaire. In order to match the employees' and leaders' statements, the questionnaires were marked. In total, 2810 employees received a questionnaire, 1246 (44%) of which were returned. Nine hundred and four (32%) questionnaires could be matched with leaders' questionnaires. Chi-square tests for non-response bias indicated that there were no differences between respondents and non-respondents concerning age, gender, and educational level.

Measures

Two questionnaires were composed. The employees' questionnaire contained measures for employee development, leader-member exchange relationship, specific goals, learning opportunities, feedback, inspirational leadership, and background variables (e.g., age, gender, education). The leaders' questionnaire contained measures for difficult goals and leaders' expectations, as well as a measure for employee development. The items of all scales are presented in Table 1.

Employee development. We viewed employee development as an employee's engagement in activities that encourage learning and improve the employee's performance in his/ her current job as well as in future jobs. Reliable objective data sources of employees' engagement in development activities were not available in the participating organizations. Therefore, we used the perceptions of employees and their direct leaders to measure employee development. A diverse range of relevant development activities, derived from previous studies (Birdi et al., 1997; Maurer, Mitchell, and Barbeite, 2002; Maurer & Tarulli, 1994; Maurer, Weiss, and Barbeite, 2003; Noe & Wilk, 1993), was presented to both employees and leaders, with the items referring to the employees' engagement in development activities in both cases. Employees and leaders indicated on a five-point scale, ranging from 1 (*never*) to 5 (*very often*), how often the employees participated in the activities described in the statement. After factor analysis using oblique rotation, 8 out of the 9 items remained. The internal consistency reliability estimates (Cronbach's alpha) were .86 and .91 for the employee and the leader scales, respectively.

Leader-member exchange relationship (LMX). Graen and Uhl Bien's (1995) seven-item LMX scale was translated and used to measure the leader-member exchange relationship. Graen and Uhl-Bien reported that internal reliability estimates of this scale have consistently been in the 80-90 range. Cronbach's alpha of the translated scale used in this study was .92.

Specific goals. No scale was available to measure the specificity of the development goals. Based on pilot interviews, we developed six items to

assess specific goals. Employees indicated the specificity of the goals they had set with their leaders on a five-point Likert scale, ranging from 1 (*no goals*), to 2 *(vague goals)*, to 5 (*very specific goals*). The scale was normally distributed with a reliability estimate of .93.

Difficult goals. As for goal specificity, no scale was available for measuring the difficulty of the development goals. One of the problems with a self-perception measure of the difficulty of a person's goals is that it confounds to the person's self-efficacy (Locke & Latham, 1990). Therefore, based on pilot interviews, we developed a six-item scale and leaders were asked about the difficulty of the goals. These six items referred to the same goals as did the specific goals items. Leaders indicated goal difficulty on a five-point Likert scale, ranging from 1 (*no goals*), to 2 *(very easy goals),* to 5 (*very difficult goals*). After factor analyses, one item had to be deleted because of cross-loading. The scale was normally distributed with a reliability estimate for the remaining five items of .88.

Providing learning opportunities. We used four items, derived from the 'Basam questionnaire' (Biessen, 1992) and Maurer & Tarulli's (1996) scale of time, to assess the degree to which leaders provided employees with opportunities for participation in learning activities. Each item was scaled from 1 (*strongly disagree*) to 5 (*strongly agree*). Cronbach's alpha was .84.

Feedback. Based on Kluger and Denisi's (1996) concept of feedback on task-learning processes, we developed a four-item scale to measure the leaders' feedback concerning the employees' development and performance. The items were scaled on a five-point Likert scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The scale's reliability coefficient was .89.

Inspirational leadership. To assess employees' perceptions of the inspirational leadership behaviors of their leaders, we selected nine items from three sub-scales (idealized influence, inspirational leadership, and intellectual stimulation) of Bass and Avolio's (1990) MLQ questionnaire. Employees indicated on a scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), in what degree they agreed with the items. A factor

analysis using oblique rotation showed that this scale measured one construct. The scale's reliability coefficient was .94.

Leaders' expectations. As in the Pygmalion studies (Davidson & Eden, 2000; Eden & Shani, 1982; Oz & Eden, 1994), leaders rated employees' potential as an assessment of leaders' expectations. In the present study, the four items developed referred to an employee's capacity to engage successfully in development activities. Leaders indicated on a five-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) whether they felt that an employee would be successful. One item had to be deleted, because of cross-loading in the factor analysis. The scale's reliability coefficient of the remaining three items was .88.

Factor analysis

To test the soundness of the measurement instrument, we conducted two factor analyses (see Table 1) using oblique rotation (because of expected correlations among the scales): one analysis using the employees' assessment of employee development (Model A) and one using the leaders' assessment of employee development (Model B). To prevent incomparability of the analyses of Model A and Model B, an item was deleted from both models not only when it cross-loaded in both models, but also when it cross-loaded in one model but not in the other. Model A showed one cross-loading: an item from the employee development scale that also cross-loaded in Model B; and Model B had two extra items that cross-loaded: one item from the difficult goals scale and an item from the leaders' expectations scale. Table 1 presents the obliquely rotated pattern matrix of the factor analyses with the items that loaded on only the factor they were supposed to load on. For both Model A and Model B, eight factors emerged, explaining 69% of the total variance for Model A and 71% for Model B. All items loaded at least .49 on the factor they were supposed to load on, and there were no cross-loadings higher than .28.

Table 1

Pattern Matrix of a Factor Analysis of Leaders' Expectations, Leadership Characteristics, and Employee Development

	Factors							
Items	1	2	3	4	5	6	7	8
Employee development:								
I spend time following a course or	.54							
educational program.	(.64)							
I am working to extend my knowledge and	.73							
skills.	(.76)							
I perform learning tasks that are not part	.52							
of my job.	(.54)							
I spend time planning and realizing my	.61							
career.	(.71)							
I go to my supervisor to discuss how I can	.55							
make progress.	(.71)							
Within my function, I am looking for a	.70							
method to improve my work.	(.73)							
Within my job, I look for activities from	.75							
which I can learn.	(.66)							
I continually learn new skills for my job.	.72							
	(.65)							
Leader-member exchange:								
Do you know where you stand with your		.81						
leader ... do you usually know how		(.80)						
satisfied your leader is with what you do?								
How well does your leader understand		.83						
your job problems and needs?		(.81)						
How well does your leader recognize your		.80						
potential?		(.79)						

Table 1 (Continued)

Items	Factors							
	1	2	3	4	5	6	7	8
Regardless of how much formal authority he/ she has built into his/her position, what are the chances that your leader would use his/her power to help you solve problems in your work?		.81 (.79)						
Again, regardless of the amount of formal authority your leader has, what are the chances that he/ she would "bail you out" at his/her expense?		.67 (.65)						
I have enough confidence in my leader that I would defend and justify his/her decision if he/she were not present to do so.		.60 (.58)						
How would you characterize your working relationship with your leader?		.55 (.54)						
Specific goals:								
Have you set clear goals, together with your supervisor, for your ...								
performance levels in your current job?			-.74 (.75)					
personal development?			-.88 (.88)					
extension of knowledge and skills?			-.92 (.92)					
participation in an educational program or course?			-.79 (.80)					
performance of learning tasks within the function?			-.81 (.82)					
goals for working towards another job?			-.71 (.72)					

Table 1 (Continued)

Items	Factors 1	2	3	4	5	6	7	8
Difficult goals:								
Ignoring the employees' capability, how difficult would you say that the following goals are for the average person on this job?								
goals for performance levels in employee's current job.				.81 (.81)				
goals for personal development.				.89 (.91)				
goals for extension of knowledge and skills.				.85 (.83)				
goals for participation in an educational program or course.				.56 (.49)				
goals for the performance of learning tasks within the function.				.70 (.66)				
Providing learning opportunities:								
Thanks to my supervisor ...								
I have the opportunity to work towards a new job.					.60 (.63)			
I am given time to extend my knowledge and skills.					.74 (.76)			
I have the opportunity to learn tasks that are not part of my current job.					.59 (.63)			
I have time to follow a training program or course.					.73 (.72)			

Table 1 (Continued)

Items	Factors 1	2	3	4	5	6	7	8
Feedback:								
My supervisor ...								
informs me of how I should perform						.73		
specific tasks if something goes wrong.						(.74)		
informs me of whether it will benefit my						.58		
career to follow a specific course or						(.60)		
training program.								
informs me of how I should undertake						.81		
new tasks.						(.83)		
informs me of which skills I can improve.						.71		
						(.73)		
Inspirational leadership:								
My supervisor ...								
articulates a compelling vision of the							.67	
future.							(.69)	
envisions exciting new possibilities.							.72	
							(.74)	
talks enthusiastically about what needs to							.72	
be accomplished.							(.74)	
gets me to look at problems from many							.65	
different angles.							(.67)	
encourages us to rethink ideas which had							.65	
never been questioned before.							(.66)	
suggests new ways of looking at how we							.60	
do our jobs.							(.60)	
talks to us about his/her most important							.72	
values and beliefs.							(.73)	
displays conviction in his/her ideals,							.75	
beliefs, and values.							(.77)	
behaves in ways that are consistent with							.77	
his/her expressed values.							(.81)	

Table 1 (Continued)

Items	Factors 1	2	3	4	5	6	7	8
Leader's expectations:								
At his/ her current level of effort, the employee is capable of ...								
further development in his/ her current job.								-.87 (.81)
extending his/her knowledge and skills.								-.97 (.92)
doing tasks from which he/ she can learn that are not part of the job.								-.66 (.55)
Deleted items:								
I am trying to find another position (employee development).								
goals for working towards another job (difficult goals).								
following a course besides the current job (leader's expectation).								

The loading behind an item without brackets is for Model A; the loading underneath, between brackets, is for Model B.

Analyses

For both Model A and Model B, we expected that leaders' expectations would be directly related to leadership characteristics, and that leadership characteristics would be directly related to employee development. The difference between the two models in the assessment of employee development (employees' and leaders' perceptions) enabled us to control for multi-source biases.

We used structural equation modeling (SEM) with maximum likelihood estimation to assess the paths specified in Figure 1 simultaneously, to test the hypotheses, and to assess the goodness of fit for this model in a multi-group analysis (Kline, 1998). To test the mediating effect of the leadership characteristics, we used the procedure described by Baron and Kenny

(1986) and Kenny, Kashy, and Bolger (1998) consisting of the following steps: (1) establishing a path between the independent variable and the dependent variable that may be mediated; (2) establishing a path between the independent variable and the mediator to make mediation possible; (3) establishing a path between the mediator and the dependent variable while holding the independent variable constant; and (4) testing the significance of the indirect effect of the independent variable on the dependent variable through the mediating variable.

The present data were nested, with a hierarchy consisting of employees within a department in one of the 28 divisions of one of the 6 organizations. The intra-class correlations for both employees' and leaders' perceptions of employee development in the present data were .22 with a total design effect of 1.71, reducing the effective sample size to 522 cases. A single-level analysis of hierarchical data may create problems owing to violation of standard assumptions of independent and identically distributed observations (Hox, 2002). Nevertheless, we analyzed the data using structural equation modeling techniques and report the results as if they came from single-level data for several reasons. Using hierarchical linear modeling, it was not possible to estimate the paths of Figure 1 simultaneously, and single-level analysis of multilevel data does not seem to lead to overly misleading results when the design effect is smaller than 2 (Maas & Hox, 2004; Muthén & Satorra, 1995). As a control, we estimated all paths of Figure 1 using hierarchical linear modeling, and this led to practically the same regression coefficients as presented in Table 3, and to exactly the same conclusions concerning the hypotheses.

Finally, we conducted a multi-group analysis using structural equation modeling, to test whether the paths specified in Figure 1 were the same in all six participating organizations. Based on the recommendations of Hu and Bentler (1998, 1999) and Fan, Thompson, and Wang (1999), the following fit indices and their cutoff levels were selected: the Comparative Fit Index (CFI, cutoff $\geq .95$), the Standardized root mean squared residual (SRMR, cutoff $\leq .08$), and the Root Mean Squared Error of Approximation

(RMSEA, cutoff ≤ .06). We present the Adjusted Goodness-of-Fit Index (AGFI, cutoff ≥ .95) because of its widespread use.

Results

The means, standard deviations, and inter-correlations of the variables are presented in Table 2. The decision to use the mediating leadership characteristics was based on Rosenthal's (1973) four-factor model. Comparison of the correlation coefficients of the present study between leaders' expectations and these four leadership characteristics with the correlation coefficients between teachers' expectations and the four factors of teachers' behaviors in Harris and Rosenthal's (1985) meta-analysis showed almost no significant differences. The correlation between expectations and behavior was r = .23 for LMX and r = .20 for a warmer social emotional climate (Fisher's z = .94, p > .05); providing learning opportunities had a correlation of r = .13 and it was r = .19 for greater opportunities for responding (Fisher's z = 1.85, p > .05); and leaders' feedback had a correlation of r = .08 and it was r = .13 for teachers' feedback (Fisher's z = 1.52, p > .05). We obtained for both specific goals (r = .21) and difficult goals (r = .44) a correlation with leaders' expectations, while Harris and Rosenthal reported only one correlation (r = .26) for the relationship between teachers' expectations and teaching increasingly more difficult material. The correlation for specific goals did not differ significantly from the correlation found by Harris and Rosenthal (Fisher's z = 1.52, p > .05), but the correlation for difficult goals was significantly stronger (Fisher's z = 6.19, p > .001).

The means for employee development scored by employees and leaders did not differ greatly. However, these two variables had only a moderate correlation coefficient of r = .40, which is common for a correlation between leader ratings and self-ratings; r was .35 in Harris and Schaubroeck's (1988) meta-analysis. The implication is that, in general, a leader and an employee held substantially different views concerning the employee's development behavior. The correlation matrix revealed that the

Table 2

Means, Standard Deviations, and Correlations (N = 904).

	Mean	SD	1	2	3	4	5	6	7	8
1. Employee development Perceptions of employees	2.86	.69								
2. Employee development Perceptions of leaders	2.66	.80	.40							
3. LMX	3.37	.84	.19	.20						
4. Specific goals	2.73	1.11	.38	.25	.53					
5. Difficult goals	2.64	.84	.23	.60	.18	.24				
6. Learning opportunities	3.16	.83	.28	.19	.46	.50	.17			
7. Feedback	3.10	.93	.15	.11	.60	.59	.15	.49		
8. Inspirational leadership	3.16	.81	.20	.17	.70	.55	.21	.52	.67	
9. Leaders' expectations	3.54	.81	.22	.65	.23	.21	.44	.13	.08	.18

For correlations greater than or equal to .07, $p \leq .05$. For correlations greater than or equal to .09, $p \leq .01$.

leadership characteristics measured using employees' questionnaires inter-correlated between $r = .46$ and $r = .70$. High inter-correlations among leadership characteristics are quite common (Den Hartog, 1997; Lowe, Kroek, & Sivasubramaniam, 1996; Podsakoff, MacKenzie, Moorman & Fetter, 1990). The variable difficult goals, which was measured using the leaders' questionnaire, was positively correlated with all other leadership characteristics, but these correlations were somewhat lower than the inter-correlations of the leadership variables that were assessed using the employees' questionnaire. This may indicate one or all of the following: (1) a form of common source bias existed between the leadership variables that were assessed using the employees' questionnaire; (2) employees could not distinguish between these leadership variables; (3) the leadership characteristics occurred together. Because of the multi-source measurement used in the present study, the somewhat elevated inter-correlations and possible common source bias did not result in inflation of the estimation coefficients of paths in both models. It was also reassuring that the elevated inter-correlations of the leadership variables assessed using employees' questionnaire were not so high that the ratio of these variables' total variance in standardized terms to their unique variance (Variance Inflation Factor ≤ 2.5) exceeded Myers' (1990) critical value (VIF > 10). This indicated that the regression coefficients were reasonably stable estimates and that there were no problems of multicollinearity.

Testing the hypotheses

Before establishing the hypothesized mediation, we calculated the paths of the hypothesized model (see Figure 1) using structural equation modeling techniques; see Table 3. For the reasons discussed above, we correlated the error terms of the leadership variables.

Following the procedure of Baron and Kenny (1986), we first examined whether there was a relationship between leaders' expectations and employee development that may be mediated. Leaders' expectations were positively correlated with both employee development variables: $r = .19$ for employee development assessed using the employees' questionnaire and

Table 3

Paths between the Variables of the Hypothesized Model (N = 904).

Path:	B		SE		β			
	(a)	(b)	(a)	(b)	(a)		(b)	
Expectations → LMX	.237	.237	.034	.034	.227	***	.227	***
Expectations → Specific goals	.283	.283	.045	.045	.207	***	.207	***
Expectations → Difficult goals	.462	.462	.031	.031	.443	***	.443	***
Expectations → Providing learning opportunities	.137	.137	.034	.034	.133	***	.133	***
Expectations → Feedback	.095	.095	.038	.038	.083	**	.083	**
Expectations → Inspirational leadership	.181	.181	.034	.034	.180	***	.180	***
LMX → Employee development	-.005	.018	.036	.031	-.006		.019	
Specific goals → Employee development	.217	.055	.025	.022	.350	***	.076	**
Difficult goals → Employee development	.085	.360	.028	.024	.104	**	.377	***
Providing learning opportunities → Employee development	.123	.063	.031	.027	.149	***	.066	**
Feedback → Employee development	-.107	-.031	.033	.029	-.144	***	-.036	
Inspirational leadership → Employee development	-.009	-.057	.040	.035	-.010		-.057	
Expectations → Employee development	.078	.465	.029	.025	.092	**	.468	***

Values in Model A of employee development assessed using the employees' questionnaire.

Values in Model B of employee development assessed using leaders' questionnaire.

* $p \leq .05$, ** $p \leq .01$, and *** $p \leq .001$.

r = .64 for employee development assessed using the leaders' questionnaire. Thus, the first condition was met for both models. The correlation between leaders' expectations and employee development was significantly stronger in Model B than in Model A. This difference may be due to a leader's general perception of an employee affecting both the leader's expectations and the leader's perception of the employee's development. This bias may also apply to the measure of difficult goals, a perception of leaders as well, which also had a strong correlation with these two variables (r = .44 and r = .60). Nevertheless, the use of multi-source measurements largely prevented wrong conclusions based on inflated correlations, because the correlations with employee development in one model could be compared with the correlations in the other.

Baron and Kenny's second step showed that the paths between leaders' expectations and each one of the leadership characteristics were significant (ranging from .08 to .44 for β or r). The leadership characteristics were potentially affected by leaders' expectations; thus, condition two was met.

In the third step, we tested whether the leadership characteristics were related to employee development when the leaders' expectations were held constant. Table 3 shows that (1) specific goals (β = .35 and β = .08), difficult goals (β = .10 and β = .38), and providing learning opportunities (β = .15 and β = .07) were indeed significantly positively related to employee development in both models; (2) LMX (β = .01 and β = .02) and inspirational leadership (β = -.01 and β = -.06) were not related to employee development in either model; and (3) feedback was negatively related to employee development assessed using the employees' questionnaire (β = -.14) and it was not related to employee development assessed using the leaders' questionnaire (β = -.04). Thus, condition three was met for the variables specific goals, difficult goals, and providing learning opportunities. LMX, feedback, and inspirational leadership did not satisfy condition three. As a result, Hypothesis 1, Hypothesis 5, and Hypothesis 6 had to be rejected.

In the fourth and final step, we tested the significance in both models of the indirect relationships between leaders' expectations and employee development through specific goals, difficult goals, providing learning opportunities, and feedback. We used Baron and Kenny's (1986) formula ($Z = (a*b/(a^2*SEb^2 + b^2*SEa^2 + SEa^2*SEb^2)^{.5})$ to calculate the Z-scores for each of the indirect relationships in order to test whether the value of zero was within the confidence interval of the indirect relationship. For the variable specific goals, the value zero lay outside the confidence interval for both models (Model A: $Z = 5.07$, $p < .001$; Model B: $Z = 2.30$, $p < .05$). For the variable difficult goals, the indirect relationship also differed significantly from zero in both models (Model A: $Z = 2.97$, $p < .01$; Model B: $Z = 10.56$, $p < .001$). We also found support for the mediation of the variable providing learning opportunities in both models (Model A: $Z = 2.78$, $p < .01$; Model B: $Z = 1.97$, $p < .05$). Thus, Hypothesis 2, Hypothesis 3, and Hypothesis 4 were confirmed.

To test whether our results would differ across the participating organizations, we additionally conducted a multi-group analysis with the paths specified in Table 3 set equally across the six organizations. The fit indices for Model A showed a very good fit: SRMR = .04, CFI = 1.00, RMSEA = .00, and AGFI = .95. Lagrange multiplier tests did not show modification indices, which indicates that the six organizations did not differ concerning the paths specified in Table 3. The fit indices for Model B were also good: SRMR = .05, CFI = .99, RMSEA = .03, and AGFI = .91, and the modification indices were limited. Overall, the multi-group analyses of both models showed a good fit, which indicates that in general the groups did not differ concerning the paths specified in Table 3. Thus, it is safe to conclude that the hypothesized mediation of specific goals, difficult goals, and providing learning opportunities occurred in all 6 organizations.

A bootstrap procedure, using 1000 bootstrap samples, showed that the 90% confidence interval of the standardized indirect relationship between leaders' expectations and employee development ranged from .10 to .14 with a mean of .12 for Model A, and from .16 to .20 with a mean of .18 for Model B. The mediation was not complete in Model A nor in Model B. The

direct relationship between leaders' expectations and leaders' perceptions of employee development was probably strong in Model B owing to common source bias in leaders' questionnaires. Nevertheless, the conclusions concerning the hypotheses did not differ between Model A and Model B.

Discussion

The results of the present study suggest that the Pygmalion effect applies to the development of employees: when leaders have high expectations, compared to low expectations, then employees engage more often in learning activities. The findings provide a better insight into how the Pygmalion effect works: leaders do all they can to make their expectations come true. The setting of specific and difficult goals and the provision of learning opportunities are leaders' key instruments for fulfilling leaders' expectations and raising employees' engagement in learning activities. LMX, feedback, and inspirational leadership are related to leaders' expectations, but not to employee development. The Pygmalion effect seems to apply to ongoing settings in civil organizations in addition to military and training settings. These findings are robust, because they are independent of the data sources used: questionnaires for leaders and their employees; and they seem to apply across organizations.

An important question is why goal setting and providing learning opportunities, instead of the other leadership characteristics, are important mediators of the Pygmalion effect and important potential stimulators of employee development. The distinction between distal (e.g., values) and proximal (e.g., goals) causes of human behavior may explain our findings (Kanfer, 1992; Locke, 1991, 2001; Locke & Henne, 1986). Distal causes influence action through proximal causes. When leaders set goals together with employees, they act at the most immediate motivational determinant level, which has direct consequences for employees' behavior. On the other hand, LMX, feedback, and inspirational leadership probably affect employees at a more distal level, such as that of values and attitudes. Providing learning opportunities stands somewhat apart from the other leadership variables, because it is an indication of actual

situational constraints or opportunities that make employee development possible.

Support for this argument can also be found in the literature. First, how feedback is mediated by goal-setting has already been investigated extensively; see Locke and Latham (1990) for an overview. Feedback that is considered important leads to goal adjustment, and the adjusted goals are responsible for the effects on behavior. Second, inspirational leadership refers to leaders' influence on employees' values and emotions, which is more distal than goals. Kirkpatrick and Locke (1996) found that goal-setting mediated the relationship between inspirational leadership and followers' attitudes and behavior. Kirkpatrick, Locke, and Latham (1996) argued that visions are superordinate goals for everyone in the organization and affect employees' self-set goals. Also, the management can translate the vision into concrete action steps for individual employees by making the vision a personal, time-limited, specific standard of performance. These individual (self-set) goals affect employees' motivational processes and performance. Finally, it is believed that LMX is based on a mechanism of social exchange and reciprocity. The question is how an employee knows how to reciprocate. An employee probably picks up cues about the leader's values and repays the leader by complying with these values. These values are less proximal motivational determinants than goals.

The present study has several theoretical implications. The findings show that, as in training settings and military organizations (Kierein & Gold, 2000; McNatt, 2000), leaders' expectations are related to employees' behaviors in ongoing civil organizational settings; this suggests that Livingston's (1969) early statement that leaders' expectations are the lever of employee performance and development was right. Furthermore, the Pygmalion theory is extended by the finding that especially specific and difficult goals, and also providing opportunities, mediate the relationship between leaders' expectations and employees' development behavior. This shows that goal-setting and the provision of opportunities are more

important for the Pygmalion effect and for research concerning employee development than was previously thought.

Practically, this implies that setting specific and difficult goals for all employees and also providing them with learning opportunities promotes positive Pygmalion effects and reduces negative Pygmalion effects, because challenging goals and learning opportunities are provided more equally throughout the workforce. Negative Pygmalion effects, such as injustice in the case of incorrect low leaders' expectations, may be reduced even further when leaders inform employees of their expectations and intentions, so employees can take measures when they feel that the leader's perceptions and visions differ from their own and injustice is at hand.

Recommendations for improving the somewhat unsuccessful Pygmalion training experiments (Eden et. al., 2000) may follow from the present findings. The goal-setting effect seems to be at the heart of the Pygmalion effect and should be an integral part of Pygmalion training, but none of the seven previous Pygmalion training experiments included goal-setting in the experimental training condition (Eden et. al., 2000). Furthermore, these experiments may benefit from a focus on employee development. The setting of learning goals stimulates mastery experiences, and the provision of learning opportunities enables employees to attribute their goal achievements to their own efforts, which enhances employees' self-efficacy; see Bandura (1997). This may initiate a vicious circle: mastery experiences lead to increased self-efficacy and better performance, which lead to the acceptance of more challenging tasks, which leads to mastery experiences and better performance, etcetera. In this perspective, Pygmalion leaders are tutors (White & Locke, 2000) who expect success of their employees, now or in the near future.

A limitation of the study is the cross-sectional research design. Although the hypothesized causality was based on previous studies, our findings regarding causality were not decisive. A strong point of this research, but at the same time also one of its limitations, is that leaders instead of employees rated difficult goals. Because of this, difficult goals stood out in comparison with the other leadership variables, but that did

not prevent this variable from behaving as expected in both models. As in other studies (Den Hartog, 1997; Lowe, Kroek, & Sivasubramaniam, 1996; Podsakoff, MacKenzie, Moorman, & Fetter, 1990), we also found high inter-correlations between leadership characteristics. High inter-correlations may result in increased standard errors of regression coefficients, and even in multicollinearity. Multicollinearity was not a problem in the present study, but the standard errors of inspirational leadership, and possibly also those of LMX, appeared to be slightly higher than the other standard errors. However, the regression coefficients for these variables were so low that, even in the case of very small standard errors, these variables would not have been significantly related to employee development. Thus, the somewhat high inter-correlations among the leadership characteristics do not seem to have had any consequences for the present conclusions.

We examined what leaders do differently when they have high expectations compared to when they have low expectations, and which of these behaviors relate to employee development. In future studies, researchers may test how leaders' behaviors affect employee development: do these behaviors have a direct effect on employee development or do employees' self-expectations and attitudes mediate this relationship? In the present study, well-measured leadership characteristics were used to investigate the mediation of the relationship between leaders' expectations and employee development. King's (1971) study showed that leaders' expectations also have an effect through non-verbal behaviors, which are hard to measure using questionnaires, but are very effective in communicating messages; in only a few minutes, employees may accurately pick up a leader's non-verbal cues (Ambady & Rosenthal, 1992). Future Pygmalion studies may be directed to these mediating non-verbal behaviors. Future studies may also address other dependent variables, such as work attitudes, proactive behavior, and turnover. Finally, experimental or longitudinal research designs should be used in future studies to enable better conclusions to be made about causal relationships. We hope that our findings inspire other researchers to conduct Pygmalion training experiments, paying particular attention to goal-setting and the provision of opportunities.

PERSONAL DETERMINANTS OF EMPLOYEE DEVELOPMENT

Developments such as globalization, technological advancements, product innovations, and changing demands affect organizations and their work processes. Workplace transformations and rising skill requirements have been common for many years now (Black & Lynch, 2004; Cappelli, 1993; Greenan, 2003; Leigh & Gifford, 1999; Osterman, 1994, 1995). Through learning, employees may adjust to changes in their work and their role in the organization, which may benefit organizational effectiveness and flexibility and employees' functioning and marketability (Hall & Mirvis, 1995; Senge, 1990). Continuously changing workplaces and skill requirements create a greater need for a long-term perspective on employee learning than do incidental training provisions. We regard employee development as employees' active engagement in many forms of learning and training, on-the-job as well as off-the-job, that has a long-term perspective and may extend into career planning and reviews of personal progress (Birdi, Allan, & Warr, 1997). Employee development involves mastering tasks or information not previously mastered (Maurer, Pierce, & Shore, 2002). Mastery experiences change individuals' knowledge, routines, or behavior. Job-related mastery experiences may include successfully working on challenging novel tasks or special assignments (McCauley, Ruderman, Ohlott, & Morrow, 1994), undergoing job transitions (Ashforth & Saks, 1995; McCall, Lombardo, & Morrison, 1988; Nicholson, 1984; Stewart, 1984), and starting up new operations (Dechant, 1990; McCall et al., 1988). Following a course or participating in training are examples of off-the-job mastery experiences.

Knowing what determines employees' engagement in development activities may contribute to more effective stimulation of employee development. Several studies of determinants of employee development have been conducted (e.g., Mathieu & Martineau, 1997; Maurer & Tarulli, 1994; Maurer, Weiss, & Barbeite, 2003; Noe & Wilk, 1993; Tharenou, 1997b, 2001b). These studies showed that elements of the theory of

planned behavior are powerful in explaining development behavior (Maurer & Palmer, 1999; Maurer & Tarulli, 1996). According to this theory (Ajzen, 1988, 1991, 1996), individuals consider the available alternatives to and likely consequences of their behavior; they take normative expectations of important reference individuals or groups into account; and they estimate their personal resources and potential obstacles. These considerations affect individuals' behavior through intentions.

In studies of determinants of employee development, it has not been taken into account that some employees have a more active and creative approach to their job and work environment, whereas other employees wait for changes in their (social) environment to which they react (Bateman & Crant, 1993; Crant, 2000). A proactive disposition such as personal initiative may drive employees' development behavior by not only influencing actual engagement in development activities, but also affecting variables that cause employees' engagement in development activities. Personal initiative is 'a behavior syndrome resulting in an individual's taking an active and self-starting approach to work and going beyond what is formally required in a given job' (Frese, Fay, Hilburger, Leng, & Tag, 1997, 140; Frese, Kring, Soose, & Zempel, 1996, 38). Personal initiative has been found to be positively related to engagement in educational activities, overcoming barriers (finding creative strategies), a continuous search to identify future problems and to develop plans to prevent these problems, and long-range career planning (Frese et al., 1996; Frese et al., 1997; Warr & Fay, 2001). Personal initiative is in itself an interesting potential determinant of employee development. In addition, development support of high-initiative employees' probably takes a different form than support of low-initiative employees, because high-initiative employees wait less passively for what is to come; they approach their environment proactively and create circumstances that are beneficial to themselves and the organization.

In the present study, we investigated how personal initiative is related to employee development. First, we aimed to explain employee development through the elements of the theory of planned behavior, and, second, we

investigated how personal initiative relates to employee development and its explanatory variables. Additionally, we examined whether high-initiative employees need to be urged to participate in learning activities as much as do low-initiative employees.

The present study was based on a field study in six organizations in which questionnaires for both leaders and employees were used. The findings may contribute to a better understanding of developing employees. Based on this knowledge, selection procedures, development programs, and guidance of employees' engagement in learning activities may be improved to stimulate employee development.

The theory of planned behavior

The theory of planned behavior postulates that through reflection on behavior, the views of others, and their own capabilities, individuals form attitudes toward that behavior, perceive some degree of social pressure (subjective norms), and form beliefs about their capability to perform successfully (perceived behavioral control). These three components, attitudes toward the behavior, subjective norms, and perceived behavioral control, affect behavior through individuals' intentions. The theory has been found useful in varying fields, such as health-related behavior (Godin & Kok, 1996), physical exercise (Hagger, Chatzisarantis, & Biddle, 2002; Hausenblas, Carron, & Mack, 1997), investment decision making (East, 1993), condom use (Albarracin, Johnson, Fishbein, & Muellerleile, 2001), career information seeking behavior (Millar & Shevlin, 2003), technology adaptation (Morris & Venkatesh, 2000), and employee development intentions (Maurer & Palmer, 1999). The relationship between employee development and employees' beliefs about their capabilities, their attitudes toward development, and their subjective norms will be discussed in the next section.

Self-efficacy

Self-efficacy refers to 'individuals' beliefs in their capabilities to organize and execute the courses of action required to produce given attainments' (Bandura 1997, 3). Self-efficacy beliefs influence peoples' direction of

actions, effort, persistence, resilience to adversity, experiences of stress and depression, self-hindering or self-aiding thought patterns, and level of performance. They are important determinants of work-related performance (Sadri & Robertson, 1993; Stajkovic & Luthans, 1998), and, more important for the present context, self-efficacy has been shown to be positively related to employee development (Noe & Wilk 1993; Maurer & Tarulli 1994; Birdi et al. 1997; Maurer & Palmer 1999; Maurer, Mitchell, & Barbeite 2002; Maurer, Wrenn, Pierce, Tross, & Collins 2003). The effect of self-efficacy on employee development may work in several ways. For instance, self-efficacy is a determinant of skill acquisition and retention of learning skills (Gist, Schwoerer, & Rosen 1989; Gist, Stevens, & Bavetta 1991). Employees with higher self-efficacy are earlier adapters of new technologies, and they learn new skills by doing so (Hill, Smith, & Mann, 1987). Moreover, people with high levels of self-efficacy are more likely to take responsibility and participate in challenging assignments than are people with low levels of self-efficacy (Bandura, 1997), and these challenges enable learning and development. Based on these findings, we expected to find a positive relationship between self-efficacy and employee development. We hypothesized the following:

> *Hypothesis 1: Employees' self-efficacy is positively related to employee development behavior.*

Attitudes toward development activities

According to the theory of planned behavior (Ajzen, 1988, 1991, 1996), at the most basic level, behavior is determined by salient information, or beliefs, relevant to the behavior. Based on an expectancy-value model, people form attitudes from beliefs about behavioral outcomes, behavioral costs, or some other attribute of the behavior. In general, attitudes toward behavior are positively related to the behavior (Kraus, 1995).

Attitudes toward employee development refer to the degree to which a person has a favorable or unfavorable view of engagement in development activities. Attitudes toward development activities are, because of the learning nature of these activities, also attitudes toward change: new

knowledge, new tasks, new situations, new people, etcetera. Preferences for new activities and anxiety about leaving routines may play a role in the forming of attitudes toward development activities. In relation to employee development, several attitudinal constructs have been investigated, such as motivation to learn, willingness to participate in development activities, and preparedness to participate in development activities. All these attitudes were positively related to employee development (Birdi et al., 1997; Colquitt, LePine, & Noe, 2000; Ford & Noe, 1992; Maurer & Tarulli, 1994; Noe & Wilk, 1993; Noe, Wilk, Mullen, & Wanek, 1997; Tharenou, 2001b). This led to the second hypothesis:

Hypothesis 2: Attitudes toward development activities are positively related to employee development behavior.

Subjective norms

The theory of planned behavior (Ajzen, 1988, 1991, 1996) states that behavior is partly determined by subjective norms: the perceived social pressure of important others to perform or not to perform the behavior. The important others' approval or disapproval of the behavior and the person's motivation to comply with the referent determine the strength of the effect of the subjective norm on behavior. In organizations, employees have to deal with several agents that may be part of the referent group, for example, peers, leaders, general managers, or staff of the HRM department. Through face to face communication, written publications (e.g., policy reports, personnel magazines), actual support, and model behavior, these agents may inform employees about their norms. For employee development, this implies that if employees think that referents consider it important to engage in development activities, it is more likely that the employees will engage in development activities. Perceived social pressure for development was found to be positively associated with intentions to develop (Maurer & Palmer, 1999). This led to the third hypothesis:

Hypothesis 3: Subjective norms are positively related to employee development behavior.

Personal initiative

Personal initiative is based on action theory (Frese et al., 1996). This theory postulates that actions are planned (possibly during action) and guided by goals (Frese & Zapf, 1994). Tasks form guidelines for employees' goals. Relatively stable predictors determine whether individuals proactively approach their environment or passively adjust to current conditions (Bateman & Crant, 1993). Several underlying personal factors may evoke initiative. Kuhl (1992, 1994) distinguished action- versus state-oriented individuals, who differ in their ways of initiating and maintaining intentions. Action-oriented individuals are able to focus on the goal and the task at hand and they quickly translate the goal into action. In contrast, state-oriented individuals are occupied with their thoughts about the goal, the task, and alternatives, which reduces the availability of cognitive resources for goal striving. The action-versus state-orientation assumes a dimension with, at one end, individuals who are capable of obtaining goals and, at the other end, individuals who are less capable of attaining goals. An action-orientation results in many forms of personal initiative (Frese et al., 1997), and personal initiative enhances self-efficacy, because individuals themselves notice, or through their social environment become aware, that they successfully attain goals (Bandura, 1986). This implies a positive relationship between personal initiative and self-efficacy, which in combination with the positive relationship between self-efficacy and employee development, see Hypothesis 1, makes an indirect relationship between personal initiative and employee development through employees' self-efficacy plausible. We hypothesized the following:

> *Hypothesis 4: Personal initiative is positively related to self-efficacy.*

The relationship between personal initiative and employee development can also be explained from individuals' preference for (un)certainty (Fay & Frese, 2000). A high preference for certainty implies anxiety when faced with unexpected, complex, and dynamic tasks and situations, and feeling comfortable with routine tasks and predictable situations. Although the

preference for (un)certainty may be related to the personality construct of action versus state orientation, these perspectives are distinct, because the action versus state orientation is about individuals' capability to self-regulate behavior, and the preference for (un)certainty concerns individuals' attitudes or willingness to avoid or to look out for uncertain tasks or situations. The preference for (un)certainty is relevant for personal initiative because high-initiative employees do not face problems in unknown and uncertain situations. High-initiative employees tackle these situations by finding solutions and they are persistent in the face of barriers and setbacks (Frese et al., 1996). Fay and Frese's (2000) study showed positive relationships between a high preference for uncertainty and initiative concepts, such as taking responsibility, personal initiative at work, attempts to introduce innovations at work, and active career planning. High preference for uncertainty and personal initiative were also positively related to attitudes toward activities that involve development, such as preparedness to change at work, interest in work innovation, and orientation toward growth and challenge (Fay & Frese, 2000). We hypothesized the following:

> *Hypothesis 5: Personal initiative is positively related to attitudes toward development activities.*

In accordance with the organization's interests, high-initiative employees consciously plan and think about potential problems, which they try to prevent and for which they try to find solutions when they occur (Fay, Sonnentag, & Frese, 1998; Frese et al., 1996). Through all these cognitions, high-initiative employees gain more insight into organizational circumstances and processes, which is a learning experience in itself. These learning experiences are augmented when high-initiative employees are confronted with barriers and setbacks, which they have to overcome through persistence and creatively finding suitable strategies. Especially in dynamic and changing organizations, new problems arise, existing work processes change, and new and different tasks have to be performed. High-initiative employees, who have an active approach to their work, are occupied with the changes and challenges the

work provides, and these challenges enable a state of learning (McCauley et al., 1994; McCall et al., 1988). We hypothesized the following:

Hypothesis 6: Personal initiative is positively related to employee development behavior.

Perceived social pressure (subjective norms) is assumed to increase when salient referents, with whom individuals are motivated to comply, are known to have a positive opinion about the behavior. Through mechanisms of normative and informational forms of social influences, individuals make subjective norms their own (Deutsch & Gerard, 1955). The effects of subjective norms on behavior differ across behaviors and between individuals (Trafimow & Finlay, 1996). For example, subjective norms are more strongly related to turnover intentions in a collectivist culture than in an individualistic culture (Abrams, Ando, & Hinkle, 1998), and managers' readiness to benchmark depends on normative beliefs for managers without benchmark experience but does not depend on normative beliefs for managers with benchmark experience (Hill, Mann, & Wearing, 1996). Also, the study by Morris and Venkatesh (2000) showed that younger workers' decisions to use technology were more strongly influenced by attitudes toward using that technology, and older workers were more strongly influenced by subjective norms and self-efficacy.

Personal initiative seems to be a plausible moderator of the relationship between subjective norms and employee development. People who easily conform to social pressure choose an easy path because they forgo the stresses of arguing, appearing to be different, and generating creative defensive and offensive strategies. According to Frese and colleagues (1996; 1997), high-initiative employees make different choices; opposition does not put them off; they try to overcome the opposition as they overcome barriers and setbacks. Thus, we expected that high-initiative employees would be more resistant to social pressure than low-initiative employees, who are more likely to comply. We hypothesized the following:

Hypothesis 7: Personal initiative negatively moderates the relationship between subjective norms and employee development behavior.

In sum, the seven hypotheses result in the relationships presented in Figure 1: (1) personal initiative affects self-efficacy and attitudes toward development activities, (2) these three variables together with subjective norms affect employee development, and (3) personal initiative moderates the relationship between subjective norms and employee development.

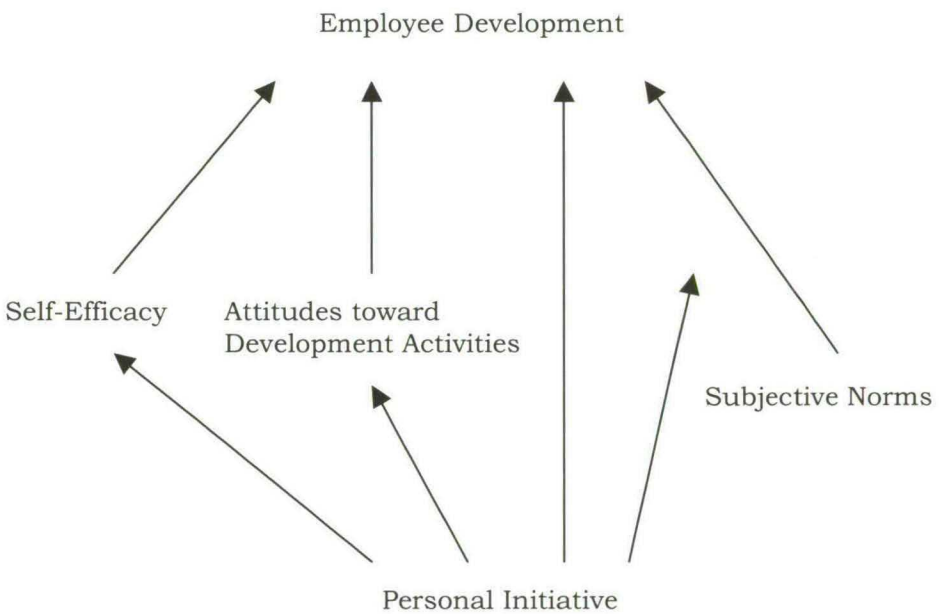


Figure 1: The Hypothesized Model.

Method

Sample and procedure

The present study was conducted in six Dutch organizations (N = 904) that were selected because they paid attention to employee development in differing degrees: a health care institution (N = 302), a police department (N = 188), a penitentiary (N = 156), a social service (N = 102), a security

service (N = 94), and a vocational training school (N = 62). The employees ranged in age from 17 to 65 years (*M* = 39.86 years, *SD* = 9.36 years); 44% were men; the average number of years of education was 14.56 with a standard deviation of 2.27. A person starts primary school at the age of four, and 18 years later may have completed a course of studies at university.

After receiving the introduction to the research in a management letter, the employees of the participating organizations received the questionnaire with the instructions and a return envelope. Upon return of the questionnaires, their direct leaders were asked to answer some questions about their employees. Each leader rated on average 4.33 employees. In total, 2810 employees received a questionnaire, of which 1246 (44%) were returned. Nine hundred and four (32%) questionnaires were matched with leaders' questionnaires. Chi-square tests for non-response bias indicated that there were no differences between respondents and non-respondents concerning age, gender, and educational level.

Measures

Two questionnaires were composed. The employees' questionnaire contained measures for employee development, attitude toward development activities, self-efficacy, subjective norms, and personal initiative. The leaders' questionnaire contained a measure for employee development. A factor analysis with all items is presented in Table 1.

Employee development. Employee development was viewed as an employee's engagement in activities that encourage learning and improve the employee's performance in his/ her current job as well as in future jobs. Derived from previous studies (Birdi et al., 1997; Maurer, Mitchell, & Barbeite, 2002; Maurer & Tarulli, 1994; Maurer, Weiss, & Barbeite, 2003; Noe & Wilk, 1993), a nine-item scale was designed consisting of a diverse range of relevant development activities. Both employees and leaders replied to this scale, with the items referring to the employee's development in both cases. Employees and leaders indicated on a five-point scale, ranging from 1 (*never*) to 5 (*very often*), how often the employees manifested the behavior described in the statement. The factor analysis

revealed that one item of the scale, presented to the leaders, cross-loaded; this item was, therefore, deleted from both the employee and the leader scales. The Cronbach's alphas for the remaining eight items were .84 and .91 for the employee and the leader scales, respectively.

Attitudes toward development activities. Based on previous studies (Noe, 1996; Noe & Wilk, 1993; Tharenou, 2001b), employees were asked what they thought of diverse activities that may enhance learning and development. Four categories of activities were distinguished: a change of tasks, a change of jobs, a change of work method, and attending a course or training. Respondents answered the items on a five-point scale ranging from 1 *(certainly not)* to 5 *(certainly).* The factor analysis showed that this scale consisted of two factors: attitude toward on-the-job development activities (5 items) and attitude toward off-the-job development activities (2 items). One item did not load on any factor and was deleted from further analyses. The attitude toward on-the-job development scale had a reliability estimate of .84; the two items of the attitude toward off-the-job development scale were correlated at .75.

Self-efficacy. Self-efficacy was assessed using Parker's (1998) measure of "Role breadth self-efficacy", which refers to the extent to which people feel confident that they are able to carry out a broader and more proactive role, beyond prescribed requirements. Three out of ten items were not applicable in each organization. Therefore, only seven out of ten items were assessed in all six organizations. Subordinates indicated how confident they were of being able to perform different tasks on a scale ranging from 1 (*not at all confident*) to 5 (*very confident*). Parker (1998) observed a Cronbach's alpha of .96. In the present study, Cronbach's alpha was .89.

Subjective norms. A six-item scale of subjective norms was constructed to assess employees' perceived approval or disapproval of employee development in the organization. Factor analysis showed that the scale consisted of two factors: a general norm in the organization and colleagues' norms. Both factors were considered as two separate variables in the analysis. All items had response categories ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The general subjective norm scale had an

internal reliability estimate of .90 and for the subjective norms of colleagues this estimate was .92.

Personal initiative. Frese et al.'s (1997) seven-item self-report instrument was used to assess personal initiative. Respondents indicated on a five-point Likert-type scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), whether they manifested the behavior described in the statement. The internal consistency of this scale was .89.

Factor analysis

A factor analysis with oblique rotation was conducted; see Table 1. The factor analysis was executed twice: the first time with employees' perceptions of employee development and the second time with leaders' perceptions of employee development. In both analyses seven factors emerged, explaining 65% of the total variance in the first analysis and 68% of the total variance in the second analysis. The factor loadings for the first analysis were at least .45 and there were no cross-loadings higher than .23. In the second analysis, the loadings were at least .46 and the cross-loadings were lower than .24.

Table 1

Pattern Matrix of a Factor Analysis of Employee Development, Attitude toward Development Activities, Self-Efficacy, Subjective Norms, and Personal Initiative.

	Factors						
Items	1	2	3	4	5	6	7
Employee development:							
I spend time following a course or educational program.	-.59 (-.62)						
I am working to extend my knowledge and skills.	-.72 (-.86)						
I perform learning tasks that are not part of my job.	-.45 (-.68)						

Table 1 (Continued)

Items	Factors 1	2	3	4	5	6	7
I spend time planning and realizing my career.	-.54 (-.69)						
I go to my leader to discuss how I can make progress.	-.52 (-.73)						
Within my function, I am looking for a method to improve my work.	-.50 (-.79)						
Within my job, I look for activities from which I can learn.	-.67 (-.85)						
I continually learn new skills for my job.	-.71 (-.84)						
Attitude toward on-the-job development activities:							
If you are asked to execute other tasks in the near future, will you do so?		.55 (.51)					
Do you want to execute other tasks in the near future?		.77 (.74)					
If you are asked to change jobs in the near future, will you do so?		.79 (.77)					
Do you want to change jobs in the near future?		.80 (.79)					
Do you want to do your work differently in the near future?		.45 (.46)					
Attitude toward off-the-job development activities:							
If you are asked to follow a course or educational program, will you do so?			.92 (.91)				
Do you want to follow a course or educational program?			.70 (.70)				

Table 1 (Continued)

Items	Factors						
	1	2	3	4	5	6	7
Self-efficacy:							
How confident would you feel?							
Analyzing a long-term problem to find a solution.				.66 (.67)			
Designing new procedures for your work area.				.69 (.69)			
Representing your work area in meetings with senior management.				.76 (.75)			
Helping to set targets/ goals in your work area.				.74 (.75)			
Contacting people outside the company (e.g. suppliers, customers).				.70 (.71)			
Presenting information to a group of colleagues.				.74 (.74)			
Visiting people from other departments to suggest doing things differently.				.77 (.76)			
Personal initiative:							
I actively attack problems.					.70 (-.73)		
Whenever something goes wrong, I search for a solution immediately.					.75 (-.82)		
Whenever there is a chance to get actively involved, I take it.					.56 (-.61)		
I take initiative immediately even when others don't.					.66 (-.68)		
I use opportunities quickly in order to attain my goals.					.71 (-.72)		
Usually I do more than I am asked to do.					.71 (-.74)		
I am particularly good at realizing ideas.					.65 (-.71)		

Table 1 (Continued)

Items	Factors 1	2	3	4	5	6	7
Subjective norms (organization):							
Is the extension of knowledge and skills a matter of importance in your organization?						.87 (.86)	
Is following a course or training a matter of importance in your organization?						.91 (.91)	
Is executing tasks from which one can learn a matter of importance in your organization?						.77 (.77)	
Subjective norms (colleagues):							
Is the extension of knowledge and skills a matter of importance for your colleagues?							.88 (.88)
Is following a course or training a matter of importance for your colleagues?							.91 (.91)
Is executing tasks from which one can learn a matter of importance for your colleagues?							.85 (.85)
Deleted items:							
I am trying to find another position (employee development).							
If you are asked to do your work differently in the near future, will you do so? (attitude toward off-the-job development activities)							

The loading without brackets is for the model with employees' perceptions of employee development; the loading underneath, between brackets, is for the model with leaders' perceptions of employee development..

Analyses

We used structural equation modeling (SEM) with maximum likelihood estimation to test the seven hypotheses simultaneously and to estimate the fit of the hypothesized model. A latent variable was constructed for employee development consisting of both leaders' and employees' perceptions of employees' engagement in development activities.

Although the present data were hierarchically nested, relating to 904 employees working in 209 departments of 28 divisions of six organizations, the consequences of violating the assumption of independent and identically distributed observations were small. In the present study, the intra-class correlation of both leaders' and employees' perceptions of employee development was .22, and the design effect was 1.71. Analysis of nested data as if they stemmed from single-level data does not lead to overly misleading results when design effects are smaller than 2 (Maas & Hox, 2004; Muthén & Satorra, 1995).

To evaluate the research model in Figure 1, the following fit indices and their cutoff levels were selected, based on the recommendations of Fan, Thompson, & Wang (1999) and Hu & Bentler (1998, 1999): the Comparative Fit Index (CFI, cutoff ≥ .95), the Standardized root mean squared residual (SRMR, cutoff ≤ .08), and the Root Mean Squared Error of Approximation (RMSEA, cutoff ≤ .06). Because of their widespread use, we present also the Adjusted Goodness-of-Fit Index (AGFI, cutoff ≥ .95).

Results

The means, standard deviations, and correlations are presented in Table 2. Both means of employee development (M = 2.86 and M = 2.66) were below the middle response category of three, indicating that, on average, employees engaged in development activities from time to time. The standard deviations (SD = .69 and SD = .80) indicated that many employees engaged rarely and only a small number of employees engaged often in development activities. Employees' self-efficacy and personal initiative were above the middle response category: M = 3.28 with SD = .65

Table 2

Means, Standard Deviations, and Intercorrelations of the Variables (N = 904).

	Mean	SD	1	2	3	4	5	6	7	8	9
1. Employee development Perceptions of employees	2.86	.69									
2. Employee development Perceptions of leaders	2.66	.80	.40								
3. Personal initiative	3.34	.75	.54	.32							
4. Self-efficacy	3.28	.65	.46	.24	.58						
5. Attitudes toward on-the-job development activities	3.11	.80	.37	.26	.33	.25					
6. Attitudes toward off-the-job development activities	3.78	1.09	.39	.24	.32	.26	.49				
7. Subjective norms (organization)	3.48	.79	.15	.03	.02	.01	-.01	-.03			
8. Subjective norms (colleagues)	3.54	.77	.22	.04	.10	.09	.00	.11	.37		
9. Subjective norms (organization) * personal initiative	.01	.67	.03	.03	.05	.03	.02	.02	.14	-.02	
10. Subjective norms (organization) * personal initiative	.06	.65	.02	-.03	-.01	.00	.03	.00	-.02	.14	.43

For $r \geq .09$ $p < .05$. For $r \geq .12$ $p < .01$.

and M = 3.34 with SD = .75, respectively. Employees' attitudes toward on-the-job development activities were less positive (M = 3.11) than their attitudes toward off-the-job development activities (M = 3.78), suggesting that, on average, employees do want to learn, but they prefer off-the-job to on-the-job activities. The scores for the subjective norms variable suggest that, in general, employees thought that the organization in general (M = 3.48) and their colleagues (M = 3.54) valued engagement in development activities. The correlation coefficient between employees' and leaders' perceptions of employee development (r = .40) suggested that employees and leaders hold substantially different views of employees' engagement in development activities. The strength of the correlation is not uncommon for self-supervisor ratings; r = .35 in the meta-analysis by Harris and Schaubroeck (1988). The variables of employee development, self-efficacy, personal initiative, attitudes toward on-the-job development activities, and attitudes toward off-the-job development activities inter-correlated positively ($.24 \leq r \leq .58$). The subjective norm variables also inter-correlated (r = .37), but they did not correlate to the personal determinants.

The first test of the hypothesized model showed a mediocre fit: SRMR = .05, CFI = .88, RMSEA = .10, and AGFI = .90. Modification indices indicated that the model improved significantly following the addition of a correlation between attitudes toward on-the-job development activities and attitudes toward off-the-job development activities. After this correlation was added, the model showed a very good fit: SRMR = .02, CFI = .98, RMSEA = .04, and AGFI = .97. Further minor model improvements might have been obtained by inter-correlating self-efficacy, attitudes toward development activities, and the subjective variables. These correlations were not added to maintain model simplicity. Table 3 presents the paths of the hypothesized model.

As expected, positive relationships were found between self-efficacy and employee development (β = .22), both attitudes toward development activities (on- and off-the-job) and employee development (β = .18 and β = .19, respectively), and both subjective norms (general and colleagues') and employee development (β = .12 for both subjective norms). Thus,

Hypothesis 1, Hypothesis 2, and Hypothesis 3 were supported. Positive relationships were also found between personal initiative and self-efficacy (β = .58), personal initiative and both attitudes toward development activities (on-the-job: β = .33 and off-the-job: β = .32), and personal initiative and employee development (β = .39). Thus, support was also found for Hypothesis 4, Hypothesis 5, and Hypothesis 6.

Table 3

Paths between the Variables of the Hypothesized Model (N = 904).

Path:	B	SE	β	
Personal initiative → Self-efficacy	.51	.02	.58	***
Personal initiative → Attitudes toward on-the-job development activities	.35	.03	.32	***
Personal initiative → Attitudes toward off-the-job development activities	.47	.05	.33	***
Personal initiative → Employee development	.30	.03	.39	***
Self-efficacy → Employee development	.19	.03	.22	***
Attitudes toward on-the-job activities → Employee development	.13	.03	.19	***
Attitudes toward off-the-job activities → Employee development	.10	.02	.18	***
Subjective norms (organizations) → Employee development	.09	.02	.12	***
Subjective norms (colleagues) → Employee development	.09	.02	.12	***
Subjective norms (organization) * Personal initiative → Employee development	-.01	.03	-.01	
Subjective norms (colleagues) * Personal initiative → Employee development	.01	.03	.01	

*** $p \leq .001$.

Table 3 also shows non-significant paths: personal initiative did not moderate the relationships between subjective norms and employee development. For the relationship between subjective norm organization and employee development the moderation effect was β = -.01, and for the relationship between subjective norms of colleagues and employee development the moderation effect was β = .01. Thus, Hypothesis 7 had to be rejected.

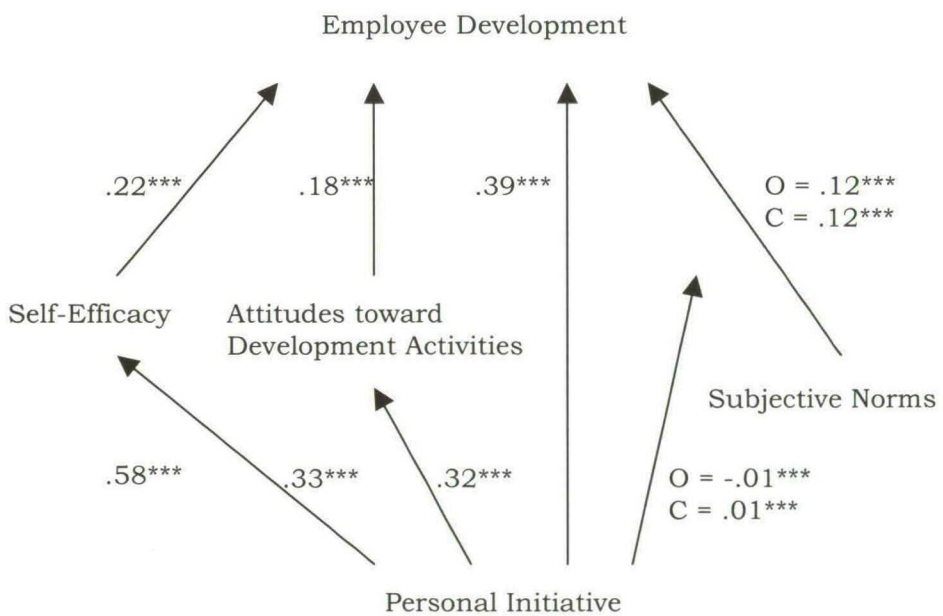
To see whether the present findings held for each of the participating organizations, a multi-group analysis was conducted with the specified causal paths in Figure 1 set equally across organizations. The multi-group model had a reasonable fit: SRMR = .07, CFI = .88, RMSEA = .04, and AGFI = .86. At an α-level of $p < .001$, no modification indices for any of the organizations emerged for one of the hypothesized paths. The modification indices referred to correlations between self-efficacy, attitudes toward development activities, and subjective norms. Thus, we conclude that the coefficients for the hypothesized paths were reasonably stable across organizations.

In the present model, personal initiative was the most important determinant of employee development, with a total standardized relationship of β = .64 with employee development, consisting of a direct relationship of β = .39 and an indirect relationship of β = .25. To see whether this model was unique for the present data, we tested an alternative model with employees' self-efficacy in the middle: (1) self-efficacy determines personal initiative and attitudes toward development activities and (2) these three variables together with subjective norms determine employee development. The specified paths of this model were significant and the model as a whole had a reasonable fit: SRMR = .03, CFI = .95, RMSEA = .06, and AGFI = .95. In this model, self-efficacy had a total standardized relationship of β = .55 with employee development, consisting of a direct relationship of β = .22 and an indirect relationship of β = .23. The total (direct) relationship of personal initiative on employee development was β = .40. In a second alternative model, we put employees' attitudes toward development activities in the middle: (1) these attitudes

determine self-efficacy and personal initiative and (2) these three variables together with subjective norms determine employee development. This model did not have a good fit, owing especially to the lack of a specified relationship between personal initiative and self-efficacy: SRMR = .04, CFI = .82, RMSEA = .12, and AGFI = .85.

Discussion

In the present study, it was hypothesized that (1) personal initiative is positively related to self-efficacy and attitudes toward development activities, (2) these three variables together with subjective norms are positively related to employee development, and (3) personal initiative moderates the relationship between subjective norms and employee development. The results are summarized in Figure 2.



O = Subjective norm (organization)

C = Subjective norm (colleagues)

Figure 2: The Beta Weights of the Hypothesized Model.

High-initiative employees had higher levels of self-efficacy and more positive attitudes toward on- and off-the-job development activities than

low-initiative employees. Furthermore, self-efficacy, attitudes toward development activities (on- and off-the-job), subjective norms (of both the organization in general and colleagues), and personal initiative were positively related to employee development. The findings suggested that personal initiative did not moderate the relationships between subjective norms (of both the organization and colleagues) and employee development.

The strong positive relationships between personal initiative, self-efficacy, attitudes toward development activities, and employee development support the idea that some employees are well equipped to be more proactive and to engage in development activities while others are less so. We aimed to distinguish these two groups of employees by viewing employees' tendency to take initiative as a central variable that affected self-efficacy, attitudes, and employee development. In all models, the results showed that personal initiative was indeed an important variable for understanding employee development. However, we must be cautious to consider personal initiative as the sole central variable that affected all other variables; the model with self-efficacy as a central variable also fitted the data. Perhaps we should follow Bateman and Crant (1993) who saw proactivity as a construct consisting of self-efficacy, attitudes toward change and challenges, and initiative behavior.

Reconsidering the model, we also might have argued that a reciprocal model applies to the interrelationships between personal initiative, self-efficacy, attitudes toward development behavior, and employee development. According to social cognitive theory, human beings operate within an interdependent causal structure consisting of three domains: internal personal factors, external environment, and behavior, all of which influence one another bidirectionally (Bandura, 1986, 1997). This theory seems most suitable to understand employee development. Employees who are high in self-efficacy show more effort and perseverance and fewer self-hindering thought processes, and set more challenging goals. This results in more personal initiative and more employee development that includes mastery experiences. Successfully attaining goals and successful learning

experiences inform employees that they are capable, which enhances their self-efficacy. Such a reciprocal model is development focused, because employees continuously grow to achieve higher levels of knowledge, skills, and self-efficacy.

The present study has several practical implications. It is in the interests of organizations to select personnel that have shown that they took initiatives in the past, for example, volunteering for special projects, events, or educational initiatives. These newcomers are more likely to engage in development on their own initiative, and probably less time and effort is needed to guide their development. Furthermore, action-oriented individuals see their work as a more central aspect of their lives (Diefendorff, Hall, Lord, & Strean, 2000), with the result that they are more likely to be willing to invest in their work and their professional development. Although high-initiative employees probably need less guidance to develop, they do need to be given opportunities that have learning potential, such as non-routine tasks, special assignments, and educational opportunities. Helping low-initiative employees to engage in development activities may take more effort, but stimulating their engagement can be most fruitful. By participating in development activities, they not only extend their knowledge and skills, but increase their self-efficacy through mastery experiences (Bandura, 1997), and a large increase in self-efficacy is possible, with positive consequences for work-related performance (Sadri & Robertson, 1993; Stajkovic & Luthans, 1998). In addition, employees low in self-efficacy are most susceptible of support (Eden & Aviram, 1993; Eden & Kinnar, 1991; Eden & Zuk, 1995; Pierce, Gardner, Dunham, & Cummings, 1993); thus, the guidance of employee development falls on fertile ground. Finally, the positive relationship between subjective norms and employee development, which was not moderated by personal initiative, suggests that letting employees know that engagement in development activities is important increases the likelihood of both high- and low-initiative employees engaging in development activities.

A limitation of the present study was that "objective" observations of employee development and personal initiative were not possible. Both engagement in learning activities and personal initiative are behaviors that occur occasionally and they are not readily observable. In addition, the archives of the organizations that participated in the study did not have reliable data concerning these behaviors. Therefore, we used subjective measures of employees and leaders. Furthermore, the variables measured using the employees' questionnaires correlated, and the personal determinants correlated more strongly to employees' perceptions of employee development than to leaders' perceptions of employee development, indicating that some common source bias was present. A latent variable employee development was constructed, consisting of both employees' and leaders' perceptions, to diminish random and systematic measurement errors in the dependent variable employee development. Unfortunately, the cross-sectional design did not allow conclusions about causality to be drawn.

We found several variables that related positively to employee development. To obtain clarity about causality and whether personal initiative was the central variable that determined all other variables, future studies should have an experimental design. Given the importance of employee development, it would be useful to further explore components that determine employee development and that make employees more active at work. Finally, researchers may investigate whether employees react differently to employee development support depending on the amount of initiative they take.

EMPLOYEE DEVELOPMENT, LEADER SUPPORT, AND ORGANIZATIONAL SUPPORT: AN EXPLANATION FOR COMPLEX RELATIONSHIPS

For many years, scholars have advocated the importance of fast organizational anticipation and adaptation to changes in the external organizational environment (Burns & Stalker, 1961; Lawrence & Lorsche, 1967; Mintzberg, 1979). The literature shows that workplace transformations are common (Bassi, 1995; Bills, 1995; Cappelli 1993; Cooper & Burke, 2002; Gephart, 2002; Leigh & Gifford, 1999; Osterman, 1994; Worrall, Cooper, & Campbell, 2000) and may imply upskilling (Cappelli, 1993; Leigh & Gifford, 1999; Spenner, 1995), which makes employee development crucial for organizational effectiveness (Argyris &Schon, 1978; Fawcett & Myers, 2001; London, 1989; Senge, 1990). Employee development goes beyond a formal course or training in that it involves many forms of learning, both on- and off-the-job, that take a longer-term perspective and also extend into career planning and reviews of personal progress (Birdi, Allan, & Warr, 1997; Noe, Wilk, Mullen, & Wanek, 1997).

From an organizational point of view, it is of interest whether and how employee development can be stimulated. Several authors have suggested that leader support (e.g., Leibowitz & Schlossberg, 1981; London, 1986; Noe, 1986) and organizational support (e.g., Maurer, 2001; Maurer & Tarulli, 1994; Noe & Wilk, 1993), a climate that fosters learning and supportive policies that facilitate participation in training and development activities, are likely key determinants of employees' engagement in learning activities. However, research showed mixed results: where in some studies positive relationships were found between leader support and employee development (e.g., Birdi et al., 1997; Kozlowski & Hults, 1987; Noe, 1996; Tharenou, 2001a), in other studies no relationship was found to exist (e.g., Kozlowski & Farr, 1988; London, Larsen, & Thisted, 1999; Maurer & Tarulli, 1994). Mixed results were also found with regard to the relationship between organizational support and employee development. A

positive climate for updating skills has been found to be positively related (Kozlowski & Hults, 1987) and not related (Maurer & Tarulli, 1994; Kozlowski & Farr, 1988) to employee development. Company policies were negatively related to motivation to learn (Tharenou, 2001b), and positively related (Kozlowski & Hults, 1987; Maurer & Tarulli, 1994) and not related (Tharenou, 1997) to employee development.

These mixed findings may have different causes. Birdi et al. (1997) showed that relationships between various determinants and employee development differed in strength depending on the dimensions of the development activities (e.g., voluntary versus non-voluntary participation, work time versus own time). Noe and Wilk (1993) proposed that differences in organizational conditions affect the strength of the correlation between support and employee development. Maurer and Tarulli (1994) found that personal moderators were in play: the relationships between support and interest in development activities and between support and intended future participation augmented the more employees valued the support.

In the present study, we dealt with the complexity of the relationships between leader support and employee development and between organizational support and employee development by further investigating potential moderator variables of these relationships. First, we assessed the moderating effects of job satisfaction, because dissatisfaction induces turnover (intentions), and dissatisfied employees may use the support to leave the organization. Second, based on the idea that good human resources management practices require a consistent approach to employees, we examined whether leader support and organizational support reinforce each other. Third, assuming that support has different effects on employees' development behavior depending on employees' characteristics, we tested the moderating effects of employees' self-efficacy.

Support not only affects employees' development behavior directly, but may also influence employees' development behavior indirectly through employees' attitudes toward development activities. Prior studies showed that both employees' beliefs about the benefits or outcomes of development activities and their general attitudes toward these activities were positively

related to employees' actual development behavior (Birdi et al., 1997; Colquitt, LePine, & Noe, 2000; Maurer & Tarulli, 1994; Maurer & Palmer, 1999; Noe & Wilk, 1993; Tharenou, 2001). In the present study, both employees' development behavior and employees' attitudes toward that behavior were used as dependent variables: because attitudes seem to be stable predictors of employees' actual engagement in development activities, factors moderating the relationships between support and attitudes affect employee development, and attitudes can conceivably be changed or influenced by leaders and conditional factors in the organization (Hicks & Klimoski, 1987; Noe & Wilk, 1993).

The present study contributes to a better understanding of the conditional relationships between organizational support and employee development and between leader support and employee development. Based on this knowledge, better recommendations to stimulate employee development can be deduced.

Job Satisfaction

Locke (1976) defined general job satisfaction as a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences. It might be argued that job satisfaction moderates the relationship between support and employee development. Organ (1977) linked job satisfaction to social exchange theory (Blau, 1964; Gouldner, 1960). One of the main assumptions of this theory is that most people expect social justice or equity to prevail in interpersonal exchanges. A person who feels short-changed will experience resentment and will take action to restore the inequity. If a person feels that he or she has received more than deserved, the person will reciprocate the exchange surplus to restore the equilibrium. Employees may see the organization and its representatives as exchange partners, whose constitution and material and immaterial gifts affect their satisfaction. High levels of satisfaction may be reciprocated in the form of good performance or other behaviors that benefit the organization and its representatives (Organ, 1977). Dissatisfied employees perceive themselves as having a credit balance in the organization, which they aim to equalize.

An extensive line of research has established that dissatisfied employees are unwilling to contribute to the organization's well-being by leaving the organization (Carsten & Spector, 1987; Griffeth, Hom, & Gaertner, 2000; Hom, Caranikas Walker, Prussia, & Griffeth, 1992; Hom & Griffeth, 1995; Steel & Ovalle, 1984; Tett & Meyer, 1993). Before quitting their job, dissatisfied employees take into account how easy it is to find an attractive alternative job (Griffeth, Hom, & Gaertner, 2000; March & Simon, 1958; Mobley, Griffeth, Hand, & Meglino, 1979; Price & Mueller, 1981). Employees are aware of the importance of development activities for their functioning and marketability (Birdi, Allan, & Warr, 1997). Through engagement in learning activities, employees obtain new knowledge and skills and increase the number of optional jobs for which they qualify (Bishop, 1997; Benson, Finegold, & Morhman, 2004). The result is that dissatisfied employees who are supported to participate in development activities may jump at this offer as a means to change their job or leave the organization. It seems plausible that receiving support evokes positive attitudes toward employee development more for dissatisfied than for satisfied employees. For dissatisfied employees, support is a means to do something about their dissatisfying situation. Satisfied employees have less need for change and are probably more indifferent to development support. We hypothesized the following:

Hypothesis 1: Job satisfaction negatively moderates the relationship between leader support and employee development.

Hypothesis 2: Job satisfaction negatively moderates the relationship between organizational support and employee development.

Hypothesis 3: Job satisfaction negatively moderates the relationship between leader support and employees' attitudes toward development activities.

Hypothesis 4: Job satisfaction negatively moderates the relationship between organizational support and employees' attitudes toward development activities.

Interaction of organizational support and leader support

Organizational support of employee development may take different forms: mission statements, training and educational facilities, management stimulating employee development, supportive behavior of colleagues, jobs with challenging tasks, etcetera. All these forms facilitate employees' engagement in development activities. Employees may engage in these activities out of self-interest or, in the context of social exchange theory, to repay the organization with positive work attitudes to employee development and development behavior, because these are supposed to be beneficial to the organization (Rhoades & Eisenberger, 2002). Leaders act as organizational agents, and employees may perceive leaders' support as part of organizational support (Kottke & Sharafinski, 1988). These forms of support correlate highly (Rhoades & Eisenberger, 2002), but have independent effects on employees' attitudes and behavior (Hofmann & Morgeson, 1999; Settoon, Bennet, & Liden, 1996; Wayne, Shore, & Liden, 1997).

The effectiveness of leaders' behaviors depends on different aspects of the situation (Yukl, 2002). Concerning employee development, this may imply that leaders' support has a stronger positive effect on employees' attitudes toward development activities and employees' engagement in these activities when this support is backed up by, for example, management who stimulates employee development, the existence of career paths, sufficient resources for participation in courses or training, or colleagues who engage in development activities. Of course, the reinforcing effect of organizational support on the effectiveness of leaders' support may also work the other way around: the relationship between organizational support and employee development is stronger when leaders support employee development. For example, when leader explain organizational circumstances, their meaning for changes in the workplace, and the necessity of employees' engagement in development activities, this may augment subordinates' acceptance of management's development policies. When both the leader and the organization support employees' development behavior, the necessity to engage in development activities is

clearer to employees, which motivates them to engage in such activities. We hypothesized the following:

Hypothesis 5: Leader support and organizational support positively interact in their relationship with employee development.

Hypothesis 6: Leader support and organizational support positively interact in their relationship with employees' attitudes toward development activities.

Self-efficacy

Self-efficacy 'refers to beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments.' (Bandura 1997, 3). A positive relationship between self-efficacy and employee development has been demonstrated in several studies (Noe & Wilk, 1993; Maurer & Tarulli, 1994; Birdi et al., 1997; Maurer & Palmer, 1999; Maurer, Mitchell, & Barbeite, 2002; Maurer, Wrenn, Pierce, Tross, & Collins, 2003). Employees' self-efficacy may also moderate the relationship between leader support and employee development and between organizational support and employee development. The plasticity theory states that people with low self-esteem are more susceptible to external influences and more malleable than are people with high self-esteem (Brockner, 1988; Pierce, Gardner, Dunham, & Cummings, 1993). Organizational conditions and leader support affect employees with low self-esteem more strongly than those with high self-esteem. Research has shown that the plasticity theory is also valid for employees' self-efficacy. Eden and Kinnar (1991) showed that the effect of an intervention to increase military candidates' self-efficacy and their rate of volunteering for special forces was stronger for those with low self-efficacy than for those with high self-efficacy. Eden and Aviram (1993) found that a job-search training program for unemployed workers increased reemployment among participants low in self-efficacy but not among employees high in self-efficacy. Eden and Zuk (1995) showed that an experiment to combat naval

cadets' seasickness had stronger results for cadets low in self-efficacy than for cadets high in self-efficacy. We hypothesized the following:

Hypothesis 7: Self-efficacy negatively moderates the relationship between leader support and employee development.

Hypothesis 8: Self-efficacy negatively moderates the relationship between organizational support and employee development.

Hypothesis 9: Self-efficacy negatively moderates the relationship between leader support and employees' attitudes toward development activities.

Hypothesis 10: Self-efficacy negatively moderates the relationship between organizational support and employees' attitudes toward development activities.

Method

Sample

The sample consisted of 1867 respondents from 44 divisions of 9 different organizations: an information technology service (Divisions = 1, N = 91), a security service (Divisions = 2, N = 90), a health care service (Divisions = 15, N = 527), a professional school (Divisions = 6, N = 112), a penitentiary (Divisions = 8, N = 199), an energy supplier (Divisions = 2, N = 314), a social welfare service (Divisions = 4, N = 139), a tax office (Divisions = 2, N = 207), and the police (Divisions = 4, N = 188). The organizations paid attention to employee development in varying degrees. A total of 4060 employees received a questionnaire, of which 1915 were returned and 1867 could be matched to their division: this amounted to a response rate of 47%, which varied from 29% to 70%. Lower response rates were partly due to shorter periods for filling out the questionnaires and the sending of fewer reminders to respondents.

Slightly more men (971 respondents) than women (896 respondents) participated in the study (men were coded 0 and women were coded 1). The average age was 41.1 years, with a standard deviation of 9.4 years. The mean of respondents' number of years of education was 14.8 years,

with a standard deviation of 2.1 years. In general, a person starts primary school at the age of four and may have finished a course of studies at university 18 years later.

The demographic characteristics of the respondents were compared to the demographics of the people of the whole sample. A chi square test did not reveal significant differences in terms of gender, age, or education.

Procedures

Procedures for collecting data were geared to organizational wishes. In all cases, employees participated voluntarily and confidentiality was assured. In most cases, respondents received their questionnaire via interoffice mail. In an accompanying management letter, they were asked to complete the questionnaire and to return it via interoffice mail. In some organizations, respondents received the questionnaire with a management letter at home (the information technology service and the social welfare service).

Measurement

Employee development. We defined employee development as employees' participation in activities that encourage learning and improve employees' performance in their current job as well as in future jobs. Derived from previous studies (Birdi et al., 1997; Maurer, Mitchell, and Barbeite, 2002; Maurer & Tarulli, 1994; Maurer, Weiss, and Barbeite, 2003; Noe & Wilk, 1993), a range of relevant learning activities was presented to employees to measure their development behavior; see Table 1. Respondents indicated on a five-point scale, ranging from 1 (*never*) to 5 (*very often*), how often they engaged in particular learning activities (seven items) (α = .85).

Attitudes toward development activities. We asked employees about their attitudes towards engagement in activities that may contribute to employees' learning and development. A six-item scale was constructed based on previous studies (Noe, 1996; Noe & Wilk, 1993; Tharenou, 2001b). We distinguished on-the-job activities and off-the-job activities. We asked respondents whether they wanted to and whether they were inclined to change tasks and jobs and to follow training or a course; see Table 1.

Respondents could give their views on the six items on a scale ranging from 1 (*absolutely not*) to 5 (*absolutely*) (α = .85).

Organizational support. Derived from previous studies (Birdi et al., 1997; Maurer and Tarulli, 1994; Noe & Wilk, 1993) and pilot interviews, 6 items were formulated to assess organizational support; see Table 1. The items concerned development support of general management, colleagues, the personnel department, and educational facilities. Respondents could answer on a five-point scale, ranging from 1 (*strongly disagree)* to 5 (*strongly agree*) (α = .82).

Leader support. Leaders' support was conceived of as leaders' guidance of subordinates' performance and development, and the provision of opportunities to participate in development activities. Based on previous studies (Birdi et al., 1997; Kozlowski & Farr, 1987; Maurer & Tarulli, 1994; Noe, 1996) and pilot interviews, an eight-item scale was developed, with anchors ranging from 1 (*strongly disagree)* to 5 (*strongly agree*), to measure in what degree employees perceived themselves to be supported by leaders. The factor analysis with oblique rotation revealed that the scale of leader support consisted of two subscales: leaders' provision of *feedback* (α = .87) concerning the employees' development and performance and leaders' *provision of opportunities* to engage in development activities (α = 85). All analyses included both subscales.

Job satisfaction. Based on the short version of Biessen's (1992) job satisfaction inventory, respondents were asked to indicate on a scale from 1 (*very dissatisfied)* to 5 (*very satisfied*) how satisfied they were with several aspects of their work: work content, salary, work environment, direct leader, relationship with colleagues and exchange of information; see Table 1. Based on the factor analysis, the item concerning satisfaction with the direct leader was deleted, because it cross-loaded on the feedback scale (α = 74).

Self-efficacy. Parker's (1998) Role Breadth Self-Efficacy scale was used to measure self-efficacy; see Table 1. This scale refers to the extent to which people feel confident that they are able to carry out a broader and more proactive role. Because not all 10 items were applicable to all

organizations, only seven items remained. Respondents indicated how confident they were in performing different tasks, ranging from 1 (*not at all confident*) to 5 (*very confident*) (α = .89).

Control Variables. Several control variables that have been found to be related to employee development were included in the analyses: age (Birdi et al., 1997; Maurer, Weiss, & Barbeite, 2003), gender (Frazis, Gittleman, & Joyce, 2000; Green, 1993; Shields, 1998), and education (Altonji & Spletzer, 1991; Birdi et al., 1997). Men were dummy coded zero and women one, and education was measured in the number of years that courses of education were successfully attended.

Group-level variables. We explored the effects of the divisions average level of: education, attitudes toward development activities, job satisfaction and job complexity. The first three variables were aggregated variables of the individual variables already described above. The last one concerned an assessment of the nature of the divisions' work on the dimensions of routine and changes in routines. Two raters scored the complexity of the divisions' work on a scale from 1 (*very simple*) to 10 (*very complex*). The correlation between the two scores was r = .85.

Factor analysis

To see whether the items loaded on the appropriate scale, a factor analysis with oblique rotation was conducted. Eight factors emerged with eigenvalues greater than 1. Although it seemed that the variable attitudes toward development activities could be split in two factors: attitudes toward on-the-job development activities and attitudes toward off-the-job development activities, we maintained one dependent variable attitudes toward development activities for several reasons. The scree plot could be interpreted as if seven factors emerged; both forms of attitudes correlated moderately strong (r = .46); and fixing the factor analyses to seven factors showed that all items referring to attitudes toward development activities loaded on the same factor. The factor analysis also revealed that the variable leader support consisted of the factors feedback and providing learning opportunities. To enable a better understanding of the relationship between leader support and employee development, both

factors were maintained as separate variables. Table 1 presents the obliquely rotated pattern matrix of the factor analysis with all items except the item "satisfaction with the direct leader", because of cross-loading. The eight factors explained 62% of the total variance. The items loaded at least .52 on the appropriate factor and there were no cross-loadings higher than .24.

Table 1

Pattern Matrix of a Factor Analysis of Employee Development, Attitudes toward Development Activities, Organizational Support, Providing Learning Opportunities, Feedback, Job Satisfaction, and Self-Efficacy.

	Factors							
Items	1	2	3	4	5	6	7	8
Employee development:								
I spend time following a course or educational program.	.74							
I am working to extend my knowledge and skills.	.81							
I perform learning tasks that are not part of my job.	.70							
I spend time planning and realizing my career.	.79							
I go to my supervisor to discuss how I can make progress.	.68							
I continuously learn new skills for my job.	.61							
I try to change position in this organization.	.55							
Attitudes toward on-the-job development activities:								
If you are asked to execute other tasks in the near future, will you do so?		.73						
Do you want to execute other tasks in the near future?		.86						

Table 1 (Continued)

Items	Factors							
	1	2	3	4	5	6	7	8
If you are asked to change jobs in the near future, will you do so?		.86						
Do you want to change jobs in the near future?		.82						
Attitudes toward off-the-job development activities								
If you are asked to follow a course or educational program, will you do so?			.86					
Do you want to follow a course or educational program?			.85					
Organizational support:								
Colleagues are working to extend knowledge and skills.				.70				
Management stimulates employee development.				.75				
The personnel department supports job changes.				.76				
Colleagues stimulate each other to participate in training or courses.				.62				
The personnel department stimulates participation in educational programs.				.87				
Because of training facilities I can perform in different tasks.				.61				
Leaders' provision of learning opportunities:								
Thanks to my supervisor ...								
I have the opportunity to work towards a new job.					.74			
I receive time to extend my knowledge and skills.					.80			
I have the opportunity to learn tasks that are not part of my current job.					.86			
I have time to follow a training program or course.					.73			

Table 1 (Continued)

Items	Factors							
	1	2	3	4	5	6	7	8
Leaders' feedback:								
My supervisor ...								
informs me of how I should perform specific tasks if something goes wrong.						.90		
informs me of whether it will benefit my career to follow a specific course or training program.						.67		
informs me of how I should undertake new tasks.						.88		
informs me of which skills I can improve.						.83		
Job satisfaction:								
I love the work I do.							.52	
The working conditions are good.							.78	
I am satisfied with my salary.							.71	
I am satisfied with my relationships with colleagues.							.56	
I am satisfied with the exchange of information.							.53	
Self-efficacy:								
How confident would you feel?								
Analyzing a long-term problem to find a solution.								.73
Representing your work area in meetings with senior management.								.78
Designing new procedures for your work area.								.82
Helping to set targets/ goals in your work area.								.81
Contacting people outside the company (e.g., suppliers, customers).								.75
Presenting information to a group of colleagues.								.78
Visiting people from other departments to suggest doing things differently.								.79

Analyses

Because the data were hierarchically nested, with 1867 employees working in 44 divisions, two-level multilevel analyses with maximum likelihood estimation were conducted using the procedure described by Hox (2002). Multilevel analysis has the advantage that, for nested data, the violation of the assumption of independent and identically distributed observations is avoided. It provides an estimation of the direct effects of individual-level and group-level variables on a single dependent individual-level variable, and it provides an estimation of the moderating effects of group-level variables on individual-level relationships.

All variables were grand mean centered, and the first-level interaction terms were calculated by multiplying grand-mean-centered variables. In the first step in the analysis, the intra-class correlations of the dependent variables were assessed; the findings were regarded as an indication of the variance explained at the individual and group levels. To avoid confusion in the attribution of a significant interaction term to a true interaction or a non-linear effect of one of the two interacting variables (Aguinis, 1995; Cortina, 1993; Lubinski & Humphreys, 1990; Shepperd, 1991), the relationships of the support and the moderator variables with employee development and the relationships of the support and the moderator variables with attitudes toward development activities were tested for non-linearity in the second step in the analysis. In the case of non-linearity, the data were evaluated using the following equation (Jaccard, Tarussi, & Wan, 1990) to fully address the complexity of the relationship between support and employee development: $Y = a + b1X + b2Z + b3\ X^2 + b4XZ + b5\ X^2Z + e$. In the third step, the individual-level explanatory variables were entered into the model, with the variance components of the slopes fixed at zero, to assess the contribution of the first-level independent variables. In total, six models were tested: for both dependent variables, a separate model for each of the moderating effects: job satisfaction, organizational support * leader support, and self-efficacy. Subsequently, the random variance components of the fixed slopes were tested on a variable-by-variable basis, as recommended by Hox. The significance of the

random slopes was established by comparing the Chi-square statistic of the fixed model plus that random slope to the Chi-square statistic of the fixed model. Significant random slopes had significantly lower Chi-square values. Finally, an exploratory analysis was conducted to determine the effect of division-level variables on the mean scores (the intercept) of employee development across groups and the regression coefficients.

Results

Table 2 reports means, standard deviations, and correlations among the variables. Employee development and attitudes toward development activities correlated at .42. The support variables were more strongly related to employee development (correlations ranged from r = .12 to r = .28) than to attitudes toward development activities: r =-.02 to r = .05. The different forms of support correlated in the range of r = .48 to r = .57; meaning that organizational support and leader support come together, employees perceive them to come together, or employees have difficulty in discerning the different kinds of support. These support variables also correlated with job satisfaction, ranging from r = .34 to r = .42. This implied that some risk existed that significant interaction terms, consisting of a combination of organizational support, leader support, and job satisfaction, were due to non-linear relationships instead of the interaction (Lubinski & Humphreys, 1990). This risk was less for the moderating effects of self-efficacy, because this variable was marginally to not at all related to the support variables.

Intra-class correlations

The intra-class correlation of employee development was *icc* = .22, and this was *icc* = .07 for attitudes toward development activities. This implied that actual development behavior differed more across divisions than did employees' attitudes toward development activities.

Table 2

Means, Standard Deviations, and Correlations of all Variables (N = 1867).

		M	SD	1.	2.	3.	4.	5.	6.	7.
1.	Gender	.48	.50							
2.	Age	41.12	9.40	-.12						
3.	Education	14.84	2.10	-.01	-.07					
4.	Employee development	2.84	.78	-.27	-.16	.12				
5.	Attitudes toward development activities	3.23	.84	-.11	-.26	.09	.42			
6.	Organizational support	2.90	.70	.10	.03	-.09	.20	-.05		
7.	Providing learning opportunities	3.14	.85	.04	-.08	.07	.28	.02	.57	
8.	Feedback	2.97	.94	.06	-.12	-.12	.12	-.02	.48	.50
9.	Job satisfaction	3.55	.60	-.06	.07	-.02	.13	-.14	.42	.42
10.	Self-efficacy	3.38	.67	-.31	-.03	.24	.41	.29	.03	.07
11.	Job satisfaction * Organizational support	.18	.68	.00	.00	-.03	-.03	.06	-.04	-.04
12.	Job satisfaction * Providing learning opportunities	.21	.75	.00	-.02	.00	.02	.10	-.04	-.07
13.	Job satisfaction * Feedback	.19	.49	.01	.02	-.01	-.01	.07	-.01	-.06
14.	Org. support * Providing learning opportunities	.34	.57	.04	.02	-.04	-.06	.04	-.07	-.14
15.	Organizational support * Feedback	.31	.63	.06	.06	-.04	-.08	.00	-.02	-.06
16.	Self-efficacy * Organizational support	.01	.51	-.04	-.02	.05	-.05	-.03	-.13	-.05
17.	Self-efficacy * Providing learning opportunities	.04	.59	-.02	.01	.03	-.04	-.07	-.05	.03
18.	Self-efficacy * Feedback	-.06	.63	-.03	-.02	.05	-.05	-.06	-.03	.02
19.	(Providing learning opportunities)^2	.71	.98	.00	.04	-.02	.04	.11	-.11	-.25
20.	Job satisfaction * (Providing learning opportunities)^2	-.04	.96	.01	.01	-.01	.08	-.12	.37	.49
21.	Organizational support * (Providing learning opportunities)^2	-.09	1.23	.06	-.03	.01	.17	-.03	.66	.65
22.	Self-efficacy * (Providing learning opportunities)^2	.02	.89	-.15	-.03	.12	.27	.18	.06	.07

Table 2 (Continued)

	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.
1.														
2.														
3.														
4.														
5.														
6.														
7.														
8.														
9.	.34													
10.	-.10	.08												
11.	.00	-.16	.01											
12.	-.06	-.18	.07	.64										
13.	-.04	-.13	.05	.59	.57									
14.	-.05	-.05	.00	.44	.46	.34								
15.	-.04	-.02	.02	.46	.33	.49	.60							
16.	-.02	-.03	-.05	.05	.02	-.06	.12	-.04						
17.	.02	.03	-.07	.01	-.03	-.05	.05	-.03	.59					
18.	.00	.02	-.03	-.02	.01	.00	.05	.03	.52	.50				
19.	-.14	-.07	.09	.25	.45	.28	.65	.33	.05	.04	.00			
20.	.34	.64	.00	-.23	-.37	-.23	-.12	-.11	.05	.16	.09	-.19		
21.	.41	.34	.04	-.08	-.11	-.10	-.25	-.13	-.03	.00	.03	-.30	.56	
22.	-.05	.00	.59	.04	.17	.10	-.02	.04	-.20	-.30	-.18	.14	-.10	.09

Non-linear relationships

To assess possible non-linear relationships, a multilevel analysis was conducted for both dependent variables, employee development and attitudes toward development, consisting of the control variables (gender, age, and education), the support variables (organizational support, providing learning opportunities, and feedback), the moderator variables (job satisfaction and employees' self-efficacy), and the quadratic terms of the support and the moderator variables. The analysis showed that non-linearity only applied to providing learning opportunities, which had a positive main effect (β = .26, p < .001) and a significant quadratic term (β = .08, p < .001) for employee development, and a positive main effect (β = .08, p < .05) and a significant quadratic term (β = .14, p < .001) for employees' attitudes toward development. To fully address the complexity of the relationship between providing learning opportunities and both dependent variables, this significant quadratic term was added to the analyses and new interaction terms were constructed by multiplying the quadratic term of providing learning opportunities by the moderator variables.

Main variables

Table 3, Table 6, and Table 8 present the multilevel analyses. These three tables have the same main variables and differ in the moderator variables tested. Concerning the main effects, we discuss the three tables simultaneously. Women were somewhat less engaged in development activities than men (β = -.04, p < .05 and β = -.03, p > .05) and they had slightly more negative attitudes toward development activities (β = -.04, p < .05). Age had a negative relationship with employee development (β = -.16, p < .001) and an even more negative relationship with employees' attitudes toward development activities (β = -.23, p < .001). Education did not seem to be related to either dependent variable (β = .01, p > .05; β = .00, p > .05), but the positive relationships of education were completely mediated by employees' self-efficacy. The latter was positively related to both employee development (β = .27 and β = .28, p < .001) and attitudes toward

development activities (β = .24 and β = .25, p < .001). The random variance component of self-efficacy was significant for the relationship with employee development (*SD* = .06, p < .001 and *SD* = .05, p < .01), as a result of which the relationship between self-efficacy and employee development varied from β = .19 to β = .35 or from β = .19 to β = .31 for an 80% interval. Job satisfaction was negatively related to both employee development (β = -.06, p < .01 and β = -.09, p < .001) and attitudes toward development activities (β = -.16 and β = -.19, p < .001). In addition, job satisfaction was found to be a suppressor variable in the analysis with employee development as dependent variable. It had a small positive correlation with employee development (r = .13, p < .001), but the relationship became negative in the multi-level analysis owing to the positive relationships of job satisfaction with organizational support (r = .42, p < .001), providing learning opportunities (r = .42, p < .001), and feedback (r = .34, p < .001), and the positive relationships of these three variables with employee development.

All three support variables had significant positive relationships with employee development (organizational support: β = .09 and β = .11, p < .001; providing learning opportunities: β = .27 and β = .25, p < .001; and feedback: β = .06, p < .01). The relationships of the support variables with attitudes toward development activities were less strong (providing learning opportunities: β = .08 and β = .09, p < .01) or non-significant (organizational support: β = -.01 and β = -.02, p > .05 and feedback: β = .02, p > .05). The relationships of the variables organizational support and feedback with both employee development and attitudes toward development were stable. By contrast, the relationships of providing learning activities with employee development and on attitudes toward development were non-linear and unstable across the divisions. First, the main variable of providing learning opportunities in the model with employee development as dependent variable, had a significant random variance component (*SD* = .10 and *SD* = .09, p < .01; *SD* = .11, p < .001), implying that the main effect ranged from β = .14 to β = .40, from β = .15 to β = .39, or from β = .11 to β = .39 for 80% intervals. Second, the

quadratic term of providing learning opportunities was significantly related to employee development (β = .08 and β = .11, p < .001) and to attitudes toward development activities (β = .12, β = .14, and β = .13, p < .001). Third, the quadratic term of providing learning opportunities in the model with attitudes toward development activities as dependent variable, had a significant random variance component (SD = .10 and SD = .11, p < .05), as a result of which the contribution of the quadratic term ranged from about zero to β = .26 for an 80% interval. Fourth, when the quadratic term became larger than β = .05, the relationship between providing learning opportunities and attitudes toward development became curvilinear: low and high levels of providing learning opportunities came together with the most positive attitudes.

Moderator variables

With regard to the moderator variables, Table 3 shows that job satisfaction did not moderate the relationships between organizational support and employee development (β = -.03, p > .05) and between feedback and employee development (β = .01, p > .05). Therefore, Hypothesis 1 (concerning leader support in the form of feedback) and Hypothesis 3 had to be rejected.

Job satisfaction moderated the non-linear relationship between providing learning opportunities and employee development, and the moderation was complex. First, according to Table 3, the main variable providing learning opportunities varied across organizations, ranging from β = .14 to β = .40 for an 80% interval. Second, the non-significant interaction term job satisfaction * providing learning opportunities (β = -.06, p > .05) had a significant random variance component (SD = .10, p < .05), suggesting that the interaction variable contributed in a range from β = -.19 to β = .07 for an 80% interval. Third, job satisfaction moderated the relationship between the quadratic term of providing learning opportunities and employee development (β = -.06, p < .05). As a result, providing learning opportunities and employee development had different relationships under different conditions of job satisfaction; see Table 4.

In general, a positive relationship between providing learning opportunities and employee development existed. The more dissatisfied employees were, the more non-linear the relationship between providing learning opportunities and employee development was. According to Figures 4 to 9 of Table 4, especially, dissatisfied employees engaged in development activities when learning opportunities were provided; the relationship between providing learning opportunities and employee development was stronger for dissatisfied employees, suggesting a negative moderation of job satisfaction on the relationship between providing learning opportunities and employee development. This supported Hypothesis 1 (concerning leader support in the form of providing learning opportunities). In some cases, however (see Figures 1 to 3 of Table 4), the relationship between providing learning opportunities and employee development was stronger the more satisfied employees were, implying a positive moderation of job satisfaction. Hypothesis 1 (concerning leader support in the form of providing learning opportunities) had to be rejected. Thus, in most organizations, job satisfaction negatively moderated the relationship between leader support and employee development, while in some organizations the moderation was positive.

In an exploratory analysis, we investigated whether the contents of the job satisfaction variable could help to explain the varying moderating effects of job satisfaction by reanalyzing the moderating effects using each of the job satisfaction items. We expected that satisfaction with work would have different consequences for the relationships of support with employee development and attitudes toward development than satisfaction with salary or other characteristics of the work or organization. The analysis revealed no significant differences between the moderating effects of the items. Nor did we succeed in pinning down the differences in moderation by regressing division variables on the regression coefficient of the interaction term job satisfaction * providing learning opportunities; see the end of the results section. Thus, we were unable to determine what caused the moderation to be positive in some and negative in most divisions.

Table 4 also shows the moderation of job satisfaction on the relationships between the support variables and attitudes toward development activities. We did not find support for linear moderation of job satisfaction on the relationships of organizational support, feedback, and providing learning opportunities with attitudes toward development activities. Thus, Hypothesis 2 (both feedback and providing learning opportunities) and Hypothesis 4 had to be rejected. The results did show a moderation of job satisfaction on the relationship between providing learning opportunities and attitudes toward development activities, but this was due to the interaction between job satisfaction and the quadratic term of providing learning opportunities (β = -.06, p < .05). This made the relationship between providing learning opportunities and attitudes toward development activities for more dissatisfied employees more curvilinear; see Table 5. For less satisfied employees, a lack of and many learning opportunities went together with positive attitudes toward development activities, and employees who were provided an average number of learning opportunities had the least positive attitudes.

Table 6 shows the analyses of the moderation of organizational support and leader support in their relationship with employee development. The expectation was for a synergy effect of organizational support and leader support. Such a synergy effect was not found. In contrast, an interaction of organizational support * leader support in the form of feedback was absent, and the interaction variable organizational support * providing learning opportunities had, contrary to the expectations, a negative contribution to employee development (β = -.05, p < .01). When organizational support was high, employees were already engaged in development activities to some degree, and the provision of learning opportunities was more weakly related to employee development. When organizational support was absent, the relationship between providing learning opportunities and employee development became stronger; see Table 7. Thus, Hypothesis 5 had to be rejected. For employees' attitudes

Table 3

Multilevel Analysis with Job Satisfaction as a Moderator Variable.

Variables	Employee development				Attitude toward development activities			
	B	SE	β p	σ p	B	SE	β p	σ p
Gender	-.06	.03	-.04*	-	-.07	.04	-.04*	-
Age	-.01	.00	-.16***	-	-.02	.00	-.23***	-
Education	.00	.01	.01	-	.00	.01	.00	-
Organizational support	.10	.02	.09***	-	-.02	.05	-.02	-
Providing learning opportunities	.25	.02	.27***	.10*	.09	.03	.09**	-
Feedback	.05	.02	.06**	-	.02	.02	.02	-
Job satisfaction	-.08	.03	-.06**	-	-.23	.04	-.16***	-
Self-efficacy	.32	.02	.27***	.06***	.31	.02	.24***	
Job satisfaction * Organizational support	-.03	.04	-.03	-	-.01	.05	-.01	-
Job satisfaction * Providing learning opportunities	-.06	.04	-.06	.10*	-.02	.03	-.02	-
Job satisfaction * Feedback	.02	.03	.01	-	.03	.04	.02	-
(Providing learning opportunities)^2	.07	.01	.08***	-	.11	.03	.12***	.11*
Job satisfaction * (Providing learning opportunities)^2	-.05	.03	-.06*	-	-.05	.02	-.06*	-
	fixed factors		incl. random var. comp.	Δ	fixed factors		incl. random var. comp.	Δ
Deviance	3318.8		3289.2	29.6***	4322.54		4315.98	6.56*

* P < .05, ** p < .01, *** p < .001.

Table 4

The Relationship between Employee Development and Providing Learning Opportunities with Job Satisfaction as a Moderator Variable.

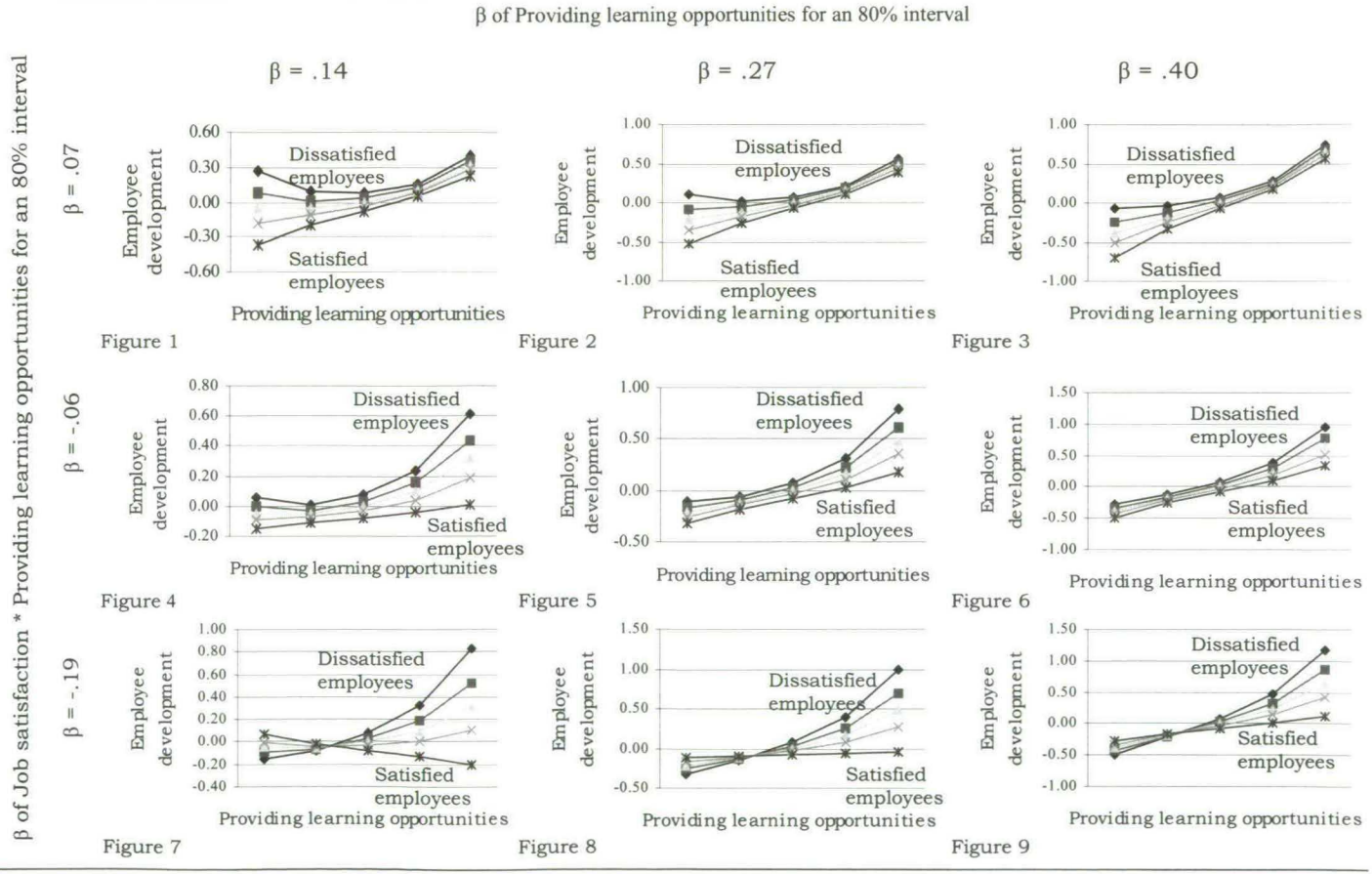


Table 5

The Relationship between Attitudes toward Development Activities and Providing Learning Opportunities with Job Satisfaction as a Moderator Variable.

β of Providing learning opportunities for an 80% interval

β = -.02

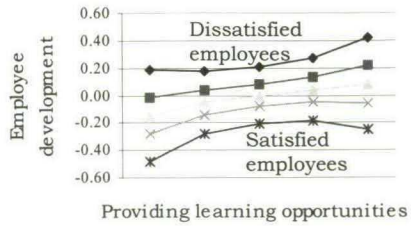


Figure 1

β = .12

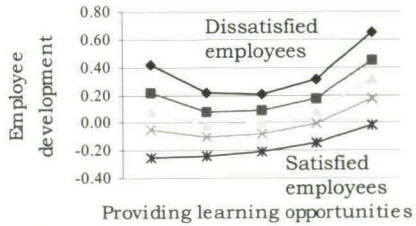


Figure 2

β = .26

Figure 3

Table 6

Multilevel Analysis with Organizational Support * Leader Support as a Moderator Variable.

Variables	Employee development						Attitudes toward development activities					
	B	SE	β	p	σ	p	B	SE	β	p	σ	p
Gender	-.05	.03	-.03	*	-		-.07	.04	-.04		-	
Age	-.01	.00	-.16	***	-		-.02	.00	-.23	***	-	
Education	.00	.01	.01		-		.00	.01	.00		-	
Organizational support	.12	.02	.11	***	-		-.02	.06	-.01		-	
Providing learning opportunities	.25	.03	.27	***	.09*		.08	.03	.08	**	-	
Feedback	.05	.02	.06	**	-		.02	.02	.02		-	
Job satisfaction	-.12	.02	-.09	***	-		-.27	.03	-.19	***	-	
Self-efficacy	.32	.02	.27	***	.06***		.31	.02	.25	***		
Organizational support* Providing learning opportunities	-.07	.03	-.05	**			-.03	.04	-.02		-	
Organizational support * Feedback	-.02	.02	-.02		-		.00	.02	.00		-	
(Providing learning opportunities)^2	.09	.02	.11	***	-		.12	.03	.14	***	.10	*
Organizational support * (Providing learning opportunities)^2	-.03	.02	-.04		-		-.00	.02	-.01		-	
	fixed factors		incl. random var. comp.		Δ		fixed factors		incl. random var. comp.		Δ	
Deviance	3313.01		3294.88		18.13**		4324.81		4318.25		6.55*	

* P < .05, ** p < .01, *** p < .001.

Table 7

The Relationship between Employee Development and Providing Learning Opportunities with Organizational Support as a Moderator Variable.

β of Providing learning opportunities for an 80% interval

β = .15

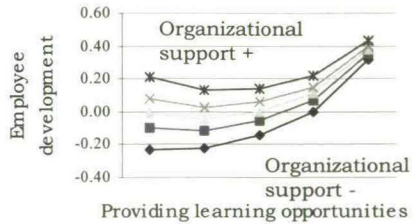


Figure 1

β = .27

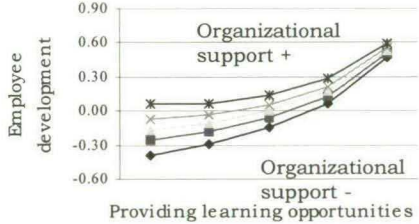


Figure 2

β = .39

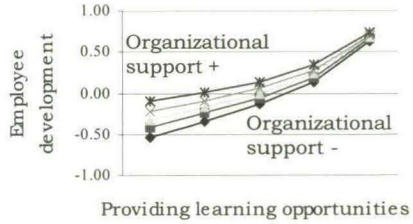


Figure 3

toward development activities, no interaction effect of organizational support * leader support was found either; thus, Hypothesis 6 also had to be rejected.

In an exploratory analysis, we checked whether the negative interaction effect of organizational support * providing learning opportunities differed across the items of organizational support. This was not the case: the negative interaction was about the same for all items of the variable organizational support.

Table 8 presents the moderation of employees' self-efficacy. Probably as a result of high inter-correlations between the interaction terms, the interaction variables organizational support * self-efficacy and providing learning opportunities * self-efficacy were not significant for either employee development or attitudes toward development activities when all the interaction terms were entered into the model together. However, an interaction did exist for these variables when they were each the only interaction variable in the model (for employee development: organizational support * self-efficacy β = -.04, p < .01 and providing learning opportunities * self-efficacy β = -.04, p < .05; for employees' attitudes toward development activities: organizational support * self-efficacy β = -.04, p < .01 and providing learning opportunities * self-efficacy β = -.07, p < .01). A negative contribution of the moderator variable self-efficacy * feedback was found in the analysis with employee development as dependent variable (β = -.05, p < .01) and in the analysis with employees' attitudes as dependent variable (β = -.05, p < .01) when the other interaction terms were also included in the model. This effect canceled out the interactions of self-efficacy with organizational support and providing learning opportunities. Thus, Hypothesis 7 and Hypothesis 9 were partly confirmed (concerning leader support in the form of feedback). Hypothesis 7 and Hypothesis 9 were partly rejected (concerning leader support in the form of providing learning opportunities), and Hypothesis 8 and Hypothesis 10 also had to be rejected.

Table 8

Multilevel Analysis with Self-Efficacy as a Moderator Variable.

Variables	Employee development						Attitudes toward development activities					
	B	SE	β	p	σ	p	B	SE	β	p	σ	p
Gender	-.05	.03	-.03		-		-.07	.04	-.04*		-	
Age	-.01	.00	-.16**		-		-.02	.00	-.23***		-	
Education	.00	.01	.01		-		.00	.01	.00		-	
Organizational support	.10	.02	.09**		-		-.03	.05	-.02		-	
Providing learning opportunities	.23	.03	.25**		.11**		.09	.03	.09**		-	
Feedback	.05	.02	.06*		-		.02	.02	.02		-	
Job satisfaction	-.12	.02	-.09**		-		-.27	.03	-.19***		-	
Self-efficacy	.32	.03	.28**		.05**		.32	.03	.25***			
Self-efficacy * Organizational support	-.00	.03	.01		-		.01	.06	.01		-	
Self-efficacy * Providing learning opportunities	-.03	.03	-.02		-		-.07	.05	-.05		-	
Self-efficacy * Feedback	-.06	.02	-.05*		-		-.06	.02	-.05**		-	
(Providing learning opportunities)^2	.06	.01	.08**		-		.12	.03	.13***		.11*	
Self-efficacy * (Providing learning opportunities)^2	-.00	.02	.00		-		-.02	.02	-.02		-	
	fixed factors		incl. random var. comp.		Δ		fixed factors		incl. random var. comp.		Δ	
Deviance	3318.46		3297.77		20.69***		4314.83		4307.70		7.13*	

* p < .05, ** p < .01, *** p < .001.

Group-level variables

Finally, we introduced some group-level variables into the multilevel model to explore division characteristics that may explain the differences in mean scores on employee development and differences in the strengths of the regression coefficients across the divisions. The group-level variables were the divisions' average level of the following: education, attitudes toward development activities, job satisfaction, and work complexity. The contribution of the four group-level variables was assessed for the intercepts and the regression coefficients with significant random variance components to find an explanation for differences across divisions.

The findings showed that the group-level variables job satisfaction and education were not related to employee development, attitudes toward development activities, and the regression coefficients with significant random variance components. The division-level variable attitudes toward development activities explained the variance of employee development (β = .06, p < .05), in addition to the individual-level variable attitudes toward development activities (β = .29, p < .001). The division-level variable attitudes toward development activities was not related to the regression coefficients with random variance components of the model with employee development as dependent variable. Thus, when employees in an organization had, on average, more positive attitudes toward development activities, the employees engaged more in these activities.

The complexity of the work in a division was positively related to the intercept of employee development (β = .45, p < .01), the regression coefficients of providing learning opportunities in the analysis with employee development as dependent variable (β = .34, p < .05), and the regression coefficient of the quadratic term of providing learning opportunities in the model with employees' attitudes as dependent variable (β = .27, p < .05). The complexity of the work was not related to the regression coefficients of employees' self-efficacy and the interaction effect of job satisfaction * providing learning opportunities in the analysis with employee development as dependent variable. Thus, when the work in an organization was more complex, the employees engaged more in

development activities, the relationship between providing learning opportunities and employee development was stronger, and the exponential relationship between providing learning opportunities and employees' attitudes toward development activities was stronger.

Discussion

Several moderator variables were tested to explore the complexity of the relationships between employee development and three forms of support: organizational support, leaders' provision of learning opportunities, and leaders' feedback. The findings suggested that some of these relationships were indeed complex. The provision of learning opportunities was positively and exponentially related to employee development; more learning opportunities went together with exponentially more development behavior. Provision of learning opportunities was, especially for dissatisfied employees, curvilinearly related to employees' attitudes toward development activities; few and many learning opportunities went together with the most positive attitudes. The positive exponential relationship between providing learning opportunities and employee development differed across divisions; it was stronger when work was more complex. Job satisfaction had different moderating effects on the relationship between providing learning opportunities and employee development; most of the time it was negative, but it was positive in some divisions. Probably dissatisfied employees used learning opportunities as a means to leave the organization in most divisions. Job dissatisfaction made the curvilinear relationships between providing learning opportunities and employee development and between providing learning opportunities and employees' attitudes toward development activities even more curvilinear, suggesting that dissatisfied employees reacted more extremely to support. Furthermore, providing learning opportunities interacted with organizational support, but, contrary to the expectations, the interaction was negative, suggesting that both forms of support are substitutable: full support of one goes together with the same amount of development behavior as full support of the other or full support of both. The last interaction we found was a negative interaction between self-efficacy and

feedback for both employee development and employees' attitudes toward development activities. This canceled out the negative interaction effects of self-efficacy with organizational support and providing learning opportunities, suggesting that employees with low self-efficacy are indeed more susceptible of support. Finally, the complexity of the work in a division seemed to be an important variable in explaining the differences in employees' engagement in development activities across divisions and the varying relationships of providing learning opportunities with employee development and with employees' attitudes toward development activities.

The present study has several theoretical implications. It should be noted that the definition of the support of employee development is important for its relationship with employees' development behavior; different components of support have varying relationships and these components correlate. In investigating predictors of employee development it is of importance to consider the relationships of several forms of support with employee development at once to determine the unique contribution of each of the support components and to clarify how employee development may be stimulated.

Furthermore, the present study adds job satisfaction as a moderator to the job satisfaction literature (Spector, 1996). Job satisfaction both negatively and positively moderated the relationship between support and employee development. Several explanations may apply. First, for negative moderation to occur, employees need attractive alternatives in order to change their jobs or leave the organization. Changing jobs or leaving the organization is a radical move and may involve high costs, such as loss of colleagues, fear of unemployment, lower income, or feelings of guilt. Responses to job dissatisfaction do not always have to be so drastic and may also result in continuation of work in combination with loss of loyalty and neglect of organizational needs and wishes (Farrell, 1983; Hagedoorn, Van Yperen, Van de Vliert, & Buunk, 2000; Rusbult, Farrell, Rogers, & Mainous, 1988). In negotiation with the organization, dissatisfied employees may be eager to reject offers, even if they are in the employees' best interest (Pillutla & Murnighan, 1996). In this context we might expect

that, in contrast to satisfied employees, dissatisfied employees turn their back on their organization and are less open to organizational support and leader support. Second, an alternative explanation for the varying moderating effects of job satisfaction may be that the moderating effects are induced by affective states, which influence job satisfaction (Brief & Weis, 2002; Fisher, 2000; Weiss, 2002; Weiss, Nicholas, & Daus, 1999). Affective states influence perceptions and information processing, and cause behavior to be prioritized (Frijda, 1986). It may be expected that employees perceive and value organizational support and offers differently according to the affective state they are in, and they may adjust their behavior accordingly. For example, employees who are dissatisfied because they are bored with their leader and the work in the organization are probably still open to receiving support, but if dissatisfaction has its origin in feelings of anger and retaliation (for instance, if an employee has been taken advantage of), employees may reject support even if it is in their best interest.

We found support for the plasticity theory; employees with lower self-efficacy are more susceptible of support. The plasticity theory holds especially for leaders' feedback, which canceled out the initial significant moderation of self-efficacy concerning organizational support and providing learning opportunities. A reason for this may be that leaders are better capable of creating an atmosphere in which employees feel at ease. It may be expected that a high leader-member exchange relationship (Graen & Uhl Bien, 1995), a relationship of trust, respect, and feelings of obligation between leader and employee, further strengthens the relationship between feedback and employee development for employees with low self-efficacy. Another reason why self-efficacy moderated especially the relationship between feedback and employee development may be that employees with high self-efficacy, compared to employees with low self-efficacy, are better able to effectively seek, integrate, and use information to increase role clarity and performance (Brown, Ganesan, & Challagalla, 2001). Employees with high self-efficacy have already acted on this information before leaders provide feedback.

We deduce from the present study that, in practice, the form of support is important for the strength of its effect on employee development and that several conditions affect the strength of this effect. Providing learning opportunities is one of the most powerful measures to stimulate employee development, followed by organizational support and feedback. Learning opportunities are more important for employees with more complex jobs.

The stimulation of employee development may have the direct and indirect unanticipated effects that employees participate in learning activities and subsequently leave the organization. The direct effect concerns especially dissatisfied employees who engage in development activities as a means to leave the organization. The indirect effect is relevant for both satisfied and dissatisfied employees, whose self-efficacy is stimulated by development activities that include mastery experiences (Bandura, 1997). As a result of increased self-efficacy, employees are inclined to set more challenging personal goals, they more easily overcome barriers, and they are more persistent and more successful. Thus, stimulating employee development is not only a means to increase knowledge and skills, but also a means to achieve employees' full growth. As a result, employees may outgrow their jobs; they become dissatisfied and turnover is likely (Verquer, Beehr, & Wagner, 2003; Mitchell, Holtom, Lee, Sablynski, & Erez, 2003). It would be wrong to prevent turnover and to prevent employees from outgrowing their jobs by not offering them development opportunities. Especially for workers whose jobs change continuously (e.g., knowledge workers), the fit between their job requirements, career goals, and job skills is likely to decline in the absence of development opportunities, with the consequence that they will look for better-fitting jobs. When turnover is seen as unwanted, it could be argued to take measures to improve employees' current and future job satisfaction before supporting employees development. Ideally, alternative tasks, vacancies, and promotion opportunities should accompany development support to reduce poor person-job fits (Benson, Finegold, & Morhman, 2004).

Practically relevant is the finding that organizational support and leader support can each result in the same amount of engagement in development activities as both forms of support together, making it possible to make the support the responsibility of leaders, of the personnel department, or of both.

Finally, the plasticity theory teaches us that employees with lower self-efficacy probably need more personal guidance for their development in the form of feedback, provision of learning opportunities, and organizational support. For employees with high levels of self-efficacy (often higher educated employees doing more complex work), the provision of learning opportunities is exponentially more important, and feedback is less valuable for their development.

A limitation of the present study is its correlational design, which prevents the drawing of conclusions about causality and makes impossible decisiveness about which of the interacting variables is the main or conditional variable. The high inter-correlations between the interaction variables were also a limitation. This applied especially to the three interaction effects concerning self-efficacy, all of which were significant when they were the only interaction term entered into the multilevel model, but two of which, self-efficacy * organizational support and self-efficacy * providing learning opportunities, lost significance after the interaction self-efficacy * feedback was entered.

Only a few forms of support were included in the present study. The various strengths of relationships between these forms of support and employee development makes us curious about whether such differences also apply to other forms of support, for example, goal-setting, inspirational leadership, and the quality of the relationship between leader and employee. It would be most interesting to know what form of support is most effective in stimulating employee development. Future studies should include several forms of support and focus on their relative contributions to employee development. Several theories are based on the principles of social exchange theory, such as the psychological contract: employees' beliefs regarding the terms and conditions of an exchange

agreement between themselves and their organization (Rousseau, 1995); perceived organizational support (POS): employees' assurance that aid will be available from the organization to help them work effectively and deal with stressful situations (Eisenberger, Armeli, Rexwinkel, Lynch, & Rhoades, 2001; Eisenberger, Huntington, Hutchison, & Sowa, 1986); and the leader-member exchange (LMX) relationship: a relationship of trust, respect, and feelings of obligation between supervisor and employee (Graen & Uhl Bien, 1995; Uhl Bien & Maslyn, 2003). Positive relationships with job satisfaction have been found for all these concepts (for the psychological contract see, e.g., Turnley & Feldman, 2000; for POS see, e.g., Rhoades & Eisenberger, 2002; for LMX see, e.g., Gerstner & Day, 1997). Future studies may focus on the role of job satisfaction in social exchange and its moderating effects on the interaction between the exchange partners. Finally, in the future, researchers may focus on organizational characteristics that make employee development relevant for an organization and on characteristics that influence the relationships between forms of support and employees' development behavior.

HOW THE LEADER-MEMBER EXCHANGE (LMX) RELATIONSHIP MODERATES FEEDBACK AND GOAL-SETTING EFFECTS ON EMPLOYEE DEVELOPMENT

Organizations change continuously owing to various developments such as globalization, technological advancement, and modifying legislations, and these changes affect work processes, jobs, and tasks (Cappelli & Neumark, 2004; Cooper & Burke, 2002; Greenan, 2003; Holman, 2005). Employee learning may benefit the organization, because learning employees become more capable of dealing with uncertain, complex, and changing situations (Argyris & Schon, 1974; Hall & Mirvis, 1995; London, 1989; Senge, 1990). The continuous nature of these developments implies that employee learning should have a continuous character as well (London & Mone, 1999).

We speak of employee development when we refer to employees' active engagement in many forms of learning and training, on-the-job as well as off-the-job, that takes a longer-term perspective than typical training provisions do, and that may also extend into career-planning and reviews of personal progress (Birdi, Allan, & Warr, 1997). These activities may involve formal training provisions (Ford, 1997) and on-the-job activities such as working on challenging novel tasks or special assignments (McCauley, Ruderman, Ohlott, & Morrow, 1994), undergoing job transitions (Ashforth & Saks, 1995; McCall, Lombardo, & Morrison, 1988), and starting up new operations (Dechant, 1990; McCall et al., 1988).

Leaders may help employees in their development (Birdi, Allan, & Warr, 1997; Kozlowski & Farr, 1988; Kozlowski & Hults, 1987; Noe, 1996). They may do so through setting goals for activities that may involve learning and through providing feedback about employees' performance and development. Goal-setting theory, of which providing feedback is an integral part, is one of the most elaborated theories with clear recommendations to enhance employees' performance (Locke & Latham, 1984, 1990, 2002). A leader-member exchange (LMX) relationship, a relationship of trust, respect, and obligation between leader and employee

(Graen & Uhl Bien, 1995), may influence goal-setting and feedback effects on employee development. In LMX relationships with high levels of trust, respect, and feelings of obligation, setting goals and providing feedback may have a stronger relationship with employee development than in low LMX relationships.

In the present field study, we elaborated how LMX moderates the relationships between the setting of goals and employee development and between the provision of feedback and employee development. This moderation effect was tested in a sample of 1112 dyadic relationships using questionnaires for both leaders and employees. The present field study is relevant for several reasons. As far as we know, it is the first study in which goal-setting was examined as a leaders' instrument to induce employee development and in which LMX relationships were examined empirically as a moderating condition that affects the effectiveness of leadership behaviors such as goal-setting and feedback. The findings of the present study may give new perspectives to the study of LMX and provide information on the interaction effects of LMX, goal-setting, and feedback, which may lead to recommendations for more effective guidance of employee development.

Goal-setting

Strong support has been found for two of Locke's (1968) main postulates: difficult goals lead to higher levels of performance than do easy goals, and specific goals produce a higher level of output than does a "do your best" goal (Locke & Latham, 1990; Mento, Steel, & Karren, 1987; Tubbs, 1986). Specific and difficult goals induce effort and persistence, they cause employees to focus on goal-relevant activities and material, they activate stored knowledge and skills, and they activate cognitive processes to find an adequate strategy (Locke & Latham, 1990, 2002).

Employee development may involve simple (e.g., attending training or learning a simple new task) and complex tasks (e.g., working on a special challenging project). After it was found that difficult goals that focus attention on a specific quantity or quality have smaller effects on performance when a person lacks the requisite knowledge to master the

task, some confusion emerged as to whether the goal-setting effect applied to complex tasks (Cervone, Jiwani, & Wood, 1991; Earley, Connolly, & Ekegren, 1989; Kanfer & Ackerman, 1989; Wood, Mento, & Locke, 1987). Additional research showed that, also for complex tasks, the goal-setting effect occurs normally when the goals are focused on finding the right strategies to accomplish the tasks (DeShon & Alexander, 1996; Winters & Latham, 1996).

For employee development, we argue that specific learning goals (e.g., participating in a special project) focus employees' attention on the tasks and the adequate strategy to complete successfully the learning activity (Klein, Whitener, & Ilgen, 1990). Difficult learning goals initiate cognitive processes to understand the tasks that are involved in completing the learning activity, which is a learning experience in itself, and difficult learning goals motivate employees to attain the goals. Thus, the more specific and difficult the learning goals are, the more development is involved. We hypothesized the following:

Hypothesis 1: Setting specific learning goals is positively related to employee development.

Hypothesis 2: Setting difficult learning goals is positively related to employee development.

Feedback

In order for goal-setting to be effective, people need feedback: knowledge about their progress in reaching their goal (Erez, 1977; Locke & Latham, 1990, 2002). Knowledge about behavior and results may be obtained through external sources (e.g., leaders, colleagues, technological monitoring, and customers) or self-monitoring (Ashford, Blatt, & VandeWalle, 2003). If people lack this knowledge, they do not know whether or not to adjust effort, to remain persistent, to focus on different activities, or to implement another strategy. Meta-analytic studies have shown stronger effects for goal-setting plus feedback than for goal-setting alone (Mento et al., 1987; Neubert, 1998). Positive effects of goal-setting without explicit feedback from others may be explained by feedback from

the task environment or individuals' self-judgments of their performance (Ilgen, Fisher, Taylor, 1979). Research has shown that the direct leader is among employees' most important feedback sources (Ashford, 1993). Feedback concerning the details of the task informs employees about their behavioral processes that generate the outcome, and this feedback may enable learning processes to attain the routines necessary for goal achievement (Kluger & DeNisi, 1996).

Just as goal-setting needs feedback to be effective, feedback needs goal-setting. Feedback alone merely reflects information, and its effect on behavior depends on how the feedback receiver appraises the feedback and decides what to do with it. Various psychological processes that involve self-efficacy and goal-setting or goal adjustment may follow from feedback, and these processes affect behavior (Latham & Locke, 1991; Locke, 1991; 2001; Locke & Latham, 1990). This mediation of the relationship between feedback and performance by goal-setting may be explained from a perspective of self-regulation of behavior (Frese & Zapf, 1994; Gollwitzer, 1993; Karoly, 1993). Self-regulation theories state that through self-monitoring and information from the environment (feedback), individuals evaluate their behavior, which may affect their perceptions of the environment and personal characteristics such as values, emotions, and goal-hierarchy. Based upon the feedback, their perceptions of the environment, and personal characteristics, individuals set new goals or adjust existing goals on which they act.

For leaders' guidance of employee development, we may distill that leaders' feedback on employees' development behavior makes employees rethink how to adjust their goals and behavior to effectively attain their overall goals. When leaders and employees set learning goals for the employees, these goals refocus the employees' attention on specific practices and mediate, at least partly, a positive relationship between feedback concerning employees' development and employees' actual development behavior. We hypothesized the following:

Hypothesis 3: The relationship between providing feedback and employee development is mediated by the setting of specific and difficult learning goals.

LMX

Leaders construe with each subordinate a unique LMX relationship that is characterized by a certain amount of trust, respect, and feelings of obligation (Graen & Uhl Bien, 1995). Research has shown positive relationships between LMX and job performance, satisfaction with the leader, overall satisfaction, commitment, role clarity, and member competence, and negative relationships between LMX and role conflict and turnover intentions (Gerstner & Day, 1997). Positive relationships have also been found between LMX and employee development (Graen, Wakabayashi, Graen, & Graen, 1990; Wakabayashi & Graen, 1984; Wakabayashi, Graen, Graen, & Graen, 1988; Wayne, Liden, Kraimer, & Graf, 1999; Wayne, Shore, & Liden, 1997).

LMX relationships are formed through several phases in which leaders try out employees (Graen & Cashman, 1975; Graen & Scandura, 1987). This process is described using the role-making model, which states that leaders provide employees with opportunities to work on unstructured tasks: non-routine tasks that cannot be reduced to standard procedures. When these tasks are executed well, the quality of the LMX relationship increases and leaders provide even more challenging tasks. When these more challenging tasks are fulfilled well, the quality of the LMX relationship increases further. Through this process, employees with a high LMX relationship become "trusted assistants" to their leader and these employees cooperate beyond their job descriptions. To accommodate this role, high LMX employees have, relative to employees in a low LMX relationship, greater access to information, more influence, more opportunities for professional growth, more decision-making latitude, and more support (Graen & Scandura, 1987). Several experiments showed that initially low LMX relationships can be changed into high LMX relationships through training leaders (Graen, Novak, & Sommerkamp, 1982; Graen, Scandura, & Graen, 1986; Scandura & Graen, 1984).

The quality of the LMX relationship reflects the nature of the exchanges between leaders and employees, which affects employees' behavior (Settoon, Bennett, & Liden, 1996; Sparrowe & Liden, 1997; Uhl Bien & Maslyn, 2003; Wayne, Shore, & Liden, 1997). According to social exchange theory (Blau, 1964) and the norm of reciprocity (Gouldner, 1960), people expect social justice in interpersonal relations. Exchanges entail unspecified obligations, and, based on trust, people expect that gestures of goodwill will be reciprocated some time in the future. Recipients of exchanges of benefits or favors feel obliged to repay the donor. Based on the work of Sahlins (1972), Sparrowe and Liden (1997) placed reciprocity on a continuum with, at one end, negative reciprocity: complete self-interest, high equivalence of what is returned, and high immediacy: short periods between the exchanges. At the other end was positive reciprocity: altruistic interest, low equivalence, and low immediacy. Negative reciprocity overlaps with Gouldner's (1960) norm of retaliation, which in extreme forms may involve exchanges of injuries. Uhl-Bien and Maslyn (2003) found significant relationships between reciprocal behaviors and LMX: self-interest, equivalence, and immediacy were negatively related, mutual interest was positively related, and other interest was not related to LMX.

With social exchange theory in mind, it seems most plausible that, in high LMX conditions, the relationships between leadership and employees' work attitudes and outcomes are stronger than in low LMX conditions. In high LMX conditions, positive reciprocity applies, and employees are open to their leader and they act in their leader's interest, whereas, in low LMX relationships, negative reciprocity applies, and employees close up to their leader's interests and suggestions. As a consequence, LMX positively moderates the relationships between the setting of learning goals and employee development and between feedback and employee development.

Several related reasons may be given for LMX moderation of the relationship between the setting of goals and employees' behavior. First, through goal-setting, leaders give employees clues to what performance level is desirable (Meyer & Gellatly, 1988). Employees in a high LMX

condition are loyal towards their leader (Dienesch & Liden, 1986; Graen & Scandura, 1987; Liden & Maslyn, 1998; Schriesheim, Neider, Scandura, & Tepper, 1992), and out of loyalty they may do their best to attain the desired goals. A form of reciprocity moderates the relationship between the setting of goals and employees' behavior.

Second, in order for goal-setting to be effective, individuals must be committed to reaching the goal (Locke & Latham, 1990). Commitment to an assigned goal, that is, one's determination to reach a goal and unwillingness to abandon or lower the goal (Hollenbeck & Klein, 1987; Locke & Latham, 1990), determines whether an assigned goal is fully strived for. Research has shown that goal commitment moderates the relationship between assigned difficult goals and performance (Erez & Zidon, 1984; Hollenbeck & Klein, 1987; Locke & Latham, 1990). Goal commitment depends on, among other things, the LMX relationship (Klein & Kim, 1998) and LMX-related characteristics, such as supportive behavior (Klein, Wesson, Hollenbeck, & Alge, 1999; Latham & Saari, 1979), trust (Earley, 1986a) and participation in setting goals (Earley & Kanfer, 1985; Erez, 1986; Erez & Arad, 1986; Erez, Earley, & Hulin, 1985).

Third, in the lowest LMX relationships negative reciprocity may apply. Fairhurst (1993) analyzed communication patterns between leaders and employees and found mutual affective and relational building communication patterns in high LMX relationships, whereas communication was adverse, confrontational, and more negative in low LMX relationships. Research has shown that in relationships where negative reciprocity is dominant, for example, in the case of leaders who lord their powers over employees, employees experience feelings of frustration, reactance, stress, helplessness, and work alienation (Ashforth, 1994, 1997). Also, employees who perceived their leader to engage in a sustained display of hostile verbal and non-verbal behavior, also called abusive supervision, were more likely to leave their jobs, and when they remained, they showed higher continuance commitment and lower normative and affective commitment (Tepper, 2000). In addition, they showed less organizational citizenship behavior (Zellars, Tepper, & Duffy,

2002), and they resisted their supervisors' downward influence tactics with greater frequency (Tepper, Duffy, & Shaw, 2001). One may question whether employees in the lowest LMX relationships that are characterized by negative reciprocity are enthusiastic to strive for goals that are set together with their leader.

Finally, value congruence between leader and employee is positively related to LMX (Ashkanasy & O'Connor, 1997; Graen & Schiemann, 1978; Kozlowski & Doherty, 1989; Steiner, 1988). In better LMX relationships, it is more likely that leaders and employees will set the same goals. Based on these arguments, we expected that the setting of learning goals is stronger related to employees' development behavior in higher LMX conditions. We hypothesized the following:

> *Hypothesis 4: LMX moderates positively the relationship between the setting of specific learning goals and employee development.*
>
> *Hypothesis 5: LMX moderates positively the relationship between the setting of difficult learning goals and employee development.*

Just as an LMX relationship moderates the relationship between the setting of goals and employee development, we argue that employees in a high LMX condition are more inclined to accept and act upon their leader's feedback than are employees in a low LMX condition. Assuming that the relationship between leaders' feedback concerning employees' development and employees' actual development behavior is, at least partly, mediated by the setting of more specific and difficult goals entails that in better LMX conditions the relationships between feedback and specific goals and between feedback and difficult goals are stronger. As far as the relationship between leaders' feedback concerning employees' development and employees' development behavior is not mediated by the adjustment/ setting of goals, the direct relationship between this feedback and employee development is positively moderated by LMX as well.

Several arguments support these propositions. First, a central element of an LMX relationship is mutual trust; employees can rely on their leader in a high LMX relationship. Research has shown that the acceptance and effect of feedback is greater when the receiver of feedback can rely on the feedback source (Dirks & Ferrin, 2002; Earley, 1986b; Podsakoff & Farh, 1989; Snyder, Williams, & Cashman, 1984). Also, feedback is more likely to be dismissed when employees doubt its accuracy and the motivations of the feedback source (Roberson, Deitch, Brief, & Block, 2003).

Second, employees are not only passive receivers of feedback; they are also active seekers of information concerning their performance and development (Ashford & Cummings, 1983). Employees seek the feedback they value, and they are more likely to accept and act upon valued feedback (Ashford, 1986). Employees value and seek more leaders' feedback when they have a higher LMX relationship. Several LMX-related characteristics have been found to be positively related to feedback-seeking: the feedback providers' credibility (Fedor, Rensvold, & Adams, 1992; Vancouver & Morrison, 1995); a relationship with leaders that is characterized by mutual trust, respect for subordinates' ideas, and consideration of their feelings (VandeWalle, Ganesan, Challagalla, & Brown, 2000); and supervisor supportiveness for feedback-seeking (Williams, Miller, Steelman, & Levy, 1999).

Furthermore, in contrast to employees with a low LMX relationship, employees with a high LMX relationship communicate more often with their leader (Baker & Ganster, 1985; Kacmar, Witt, Zivnuska, & Gully, 2003). Research has shown that the amount of contact between the feedback provider and receiver is positively related to feedback acceptance (Inderrieden, Keaveny, & Allen, 1988; Ryan, Brutus, Greguras, & Hakel, 2000).

Considering that feedback induces various psychological processes that involve, among other things, goal-setting (Locke & Latham, 1990), we expected that LMX would moderate the relationships between leaders' feedback and employees' development behavior and between leaders'

feedback and both specific and difficult learning goals. We hypothesized the following:

Hypothesis 6: LMX positively moderates the relationship between feedback and employee development.

Hypothesis 7: LMX positively moderates the relationship between feedback and the setting of specific learning goals.

Hypothesis 8: LMX positively moderates the relationship between feedback and the setting of difficult learning goals.

Method

Sample and Procedure

A total of 1112 employees and their direct leaders (N for department level = 233) participated in the present study. They worked in seven different organizations with in total 36 divisions: a health care institution (N for individual level = 302, N for department level = 60, N for division level = 10), a police department (N for individual level = 188, N for department level =69, N for division level = 4), a penitentiary (N for individual level = 156, N for department level = 25, N for division level = 6), a social service (N for individual level = 102, N for department level = 22, N for division level = 4), a security service (N for individual level = 94, N for department level = 24, N for division level = 2), a high-tech company (N for individual level = 208, N for department level = 21, N for division level = 8), and a vocational training school (N for individual level = 62, N for department level = 12, N for division level = 2). The organizations were selected because they all focused to some extent on employee development. Divisions within the organizations were geographically separated from each other and may be regarded as distinct entities because of differences in work or differences in organizational culture, or both. The employees ranged in age from 17 to 65 years (M = 40.46 years, SD = 9.47 years). Forty-seven percent were men. The average number of years of education was 14.94, with a standard deviation of 2.28. It should be noted that a

person starts primary school at the age of four and may have completed a course of studies at university 18 years later.

The research was introduced using a management letter. The employees of the participating organizations then received the questionnaire, with instructions and a return envelope. Also, the direct leaders were asked for some information about their employees. On average, each leader rated 4.77 employees. In total, 3295 employees received a questionnaire, of which 1546 (47%) were returned, and 1112 questionnaires (34%) could be matched with leaders' questionnaires. Based on the percentages for each of the organizations as a whole, chi-square tests for non-response bias indicated that there were no differences between respondents and non-respondents concerning age, gender, and educational level.

Measures

Two questionnaires were composed. The employees' questionnaire contained measures for employee development, leader-member exchange relationship, specific goals, feedback, and background variables (age, gender, and education). The leaders' questionnaire contained measures for difficult goals and employee development. A factor analysis including all items is presented in Table 1.

Employee development. Employee development was viewed as an employee's engagement in activities that encourage learning and improve the employee's performance in his/ her current job as well as in future jobs. Based on previous studies (Birdi et al., 1997; Maurer, Mitchell, & Barbeite, 2002; Maurer & Tarulli, 1994; Maurer, Weiss, & Barbeite, 2003; Noe & Wilk, 1993), a scale was composed consisting of a diverse range of relevant development activities. Both employees and leaders responded to this scale using the items referring to the employee's development. Employees and leaders indicated on a five-point scale, ranging from 1 (*never*) to 5 (*very often*), how often the employees manifested the behavior described in the statement. The factor analysis revealed that one item of the scale presented to the leaders cross-loaded; this item was, therefore, deleted from both the employee and the leader scales. The Cronbach's

alphas for the remaining eight items were .85 and .91 for the employee and the leader scales, respectively.

Leader-member exchange relationship (LMX). We used Graen and Uhl Bien's (1995) seven-item LMX scale to measure the leader-member exchange relationship. Graen and Uhl Bien reported that internal reliability estimates of this scale had consistently been in the 80%-90% range. In the present study, Cronbach's alpha was .92.

Specific goals. Six items were developed to measure learning-goal specificity. The goals referred to activities that may have involved learning. Employees indicated the specificity of the goals they had set with their leaders on a five-point Likert scale, ranging from 1 (*no goals*), to 2 (*unclear goals*), to 5 (*very specific goals*). The scale's reliability estimate was .93.

Difficult goals. Six items were developed to measure learning-goal difficulty. These items referred to the same learning goals as did the specific goal items. Because a self-perception measure of the difficulty of one's own goals confounds to one's self-efficacy (Locke & Latham, 1990), leaders were asked about the difficulty of the goals. Following the instructions of Locke and Latham (1990), the heading of the items was as follows: 'Ignoring the employees' capability, how difficult would you say that the following goals are for the average person on this job?' Leaders indicated the goal difficulty on a five-point Likert scale, ranging from 1 (*no goals*), to 2 (very easy goals), to 5 (*very difficult goals*). The scale's reliability estimate, Cronbach's alpha, was .87.

Feedback. Based on Kluger and Denisi's (1996) concept of task-detail feedback that focuses on learning processes concerning the task at hand, we developed a four-item scale to measure the leaders' feedback concerning the employees' development and performance. The items were scaled on a five-point Likert scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The scale's reliability coefficient was .87.

Factor analysis

In order to obtain some evidence for the measures' discriminant validity, we conducted two exploratory factor analyses with oblique rotation; see Table 1: the first analysis using employees' perceptions of

employee development and the second analysis using leaders' perceptions of employee development. In both analyses, five factors emerged with eigenvalues greater than 1, explaining 63% of the total variance in the first and 67% of the total variance in the second analysis. All items had factor loadings of at least .50 in the first and .53 in the second analysis. There were no cross-loadings higher than .20.

Table 1

Pattern Matrix of the Factor Analysis of Employee Development, LMX, Specific Goals, Difficult Goals, and Feedback.

	Factors				
Items	1	2	3	4	5
Employee development:					
I spend time following a course or educational program.	.56 (.53)				
I am working to extend my knowledge and skills.	.75 (.82)				
I perform learning tasks that are not part of my job.	.50 (.61)				
I spend time planning and realizing my career.	.59 (.61)				
I go to my supervisor to discuss how I can make progress.	.52 (.63)				
Within my function, I am looking for a method to improve my work.	.66 (.85)				
Within my job, I look for activities from which I can learn.	.73 (.87)				
I continually learn new skills for my job.	.72 (.83)				

Table 1 (Continued)

Items	Factors 1	2	3	4	5
Leader-member exchange:					
Do you know where you stand with your leader ...		.74			
do you usually know how satisfied your leader is with what you do?		(.74)			
How well does your leader understand your job problems and needs?		.82			
		(.80)			
How well does your leader recognize your potential?		.80			
		(.78)			
Regardless of how much formal authority he/ she has built into his/her position, what are the chances that your leader would use his/her power to help you solve problems in your work?		.87			
		(.84)			
Again, regardless of the amount of formal authority your leader has, what are the chances that he/ she would "bail you out" at his/her expense?		.74			
		(.73)			
I have enough confidence in my leader that I would defend and justify his/her decision if he/she were not present to do so.		.64			
		(.62)			
How would you characterize your working relationship with your leader?		.67			
		(.65)			
Specific goals:					
Have you set clear goals, together with your supervisor, for ...					
your performance levels in your current job?			-.73		
			(-.71)		
your personal development?			-.91		
			(-.88)		

Table 1 (Continued)

Items	Factors 1	2	3	4	5
your extension of knowledge and skills?			-.96		
			(.95)		
your participation in an educational program or			-.81		
course?			(-.83)		
your performance of learning tasks within the			-.81		
function?			(-.81)		
working towards another job?			-.68		
			(-.68)		
Difficult goals:					
Ignoring the employees' capability, how difficult					
would you say that the following goals are for the					
average person on this job?					
goals for performance levels in employee's current				.77	
job.				(.80)	
goals for personal development.				.84	
				(.90)	
goals for extension of knowledge and skills.				.84	
				(.80)	
goals for participation in an educational program				.59	
or course.				(.54)	
goals for the performance of learning tasks within				.74	
the function.				(.67)	
goals for working towards another job				.60	
				(.53)	
Feedback:					
My supervisor ...					
informs me of how I should perform specific tasks					.78
if something goes wrong.					(.78)

Table 1 (Continued)

Items	Factors 1	2	3	4	5
informs me of whether it will benefit my career to					.55
follow a specific course or training program.					(.57)
informs me of how I should undertake new tasks.					.83
					(.84)
informs me of which skills I can improve.					.60
					(.62)

Loadings without brackets refer to the analysis using employees' perceptions of employee development.

Loading between brackets refer to the analysis using leaders' perceptions of employee development.

Analyses

The collected data were hierarchically nested: employees and their individual relationships with their leaders on the first level; the employees who worked under the same leader on the second (group) level; and the groups who worked in the same division on the third (group) level. Nested data may create problems in standard regression procedures, because the standard assumption of independent and identically distributed observations is generally not valid. Therefore, a three-level hierarchical regression model with maximum likelihood estimation was assessed using the procedure described by Hox (2002). In the first step of the procedure, the intercept-only model was assessed to determine the intraclass correlation, which indicated how much variance in the dependent variable employee development could be ascribed to the second (department) and the third (division) level compared to the total variance of all three levels. Second, to establish the contribution of each first-level independent variable, the first-level explanatory variables (grand mean centered variables) were entered step by step into the model with the corresponding variance components of the slopes fixed at zero. To test the mediation of the relationships between feedback and employee development through

both goal-setting variables, we entered the control variables and feedback into the model before we added the goal-setting variables. Next, we put the other main variables into the analyses. Mediation of the relationship between feedback and employee development by the goal-setting variables was tested using the procedure described by Baron and Kenny (1986) and Kenny, Kashy, and Bolger (1998). Subsequently, we entered the interaction terms (multiplications of grand mean centered variables) into the model, but before the moderation effects were tested, the significance of a non-linear relationship between the leadership variables and employee development was tested to avoid confusion in the attribution of significant interaction terms to a true interaction or a non-linear relationship of one of the two interacting variables with the dependent variable (Aguinis, 1995; Cortina, 1993; Lubinski & Humphreys, 1990; Shepperd, 1991). The non-linear terms of the variables with a significant non-linear relationship were included in the analysis. In an exploratory analysis, the third step was conducted to see whether the slopes of the fixed effects varied across groups. As recommended by Hox, the testing for random slope variation was done on a variable-by-variable basis. To test the significance of a random slope, the Chi-square statistic of the fixed model plus that random slope was compared to the Chi-square statistic of the fixed model. A significant random slope resulted in a significantly lower Chi-square value. Our main interest in the present study was in the first hierarchical level: the interaction between employees and leaders, and employees' development behavior. Therefore, we conducted no analysis including group-level variables.

Results

The means, standard deviations, and inter-correlations of the variables are presented in Table 2. The moderate correlation of .40 between leaders' and employees' perceptions of employee development indicates that the leaders and the employees had substantially different views concerning the employees' development behavior. Moderate correlations between

Table 2

Means, Standard Deviations, and Intercorrelations of the Variables (N = 1112).

	M	SD	1	2	3	4	5	6	7	8	9	10	11
1. Employee development Perceptions of employees	2.84	.65											
2. Employee development Perceptions of leaders	2.76	.78	.40										
3. LMX	3.35	.82	.23	.22									
4. Specific goals	2.78	1.06	.38	.23	.51								
5. Difficult goals	2.57	.81	.23	.61	.15	.22							
6. Feedback	3.06	.89	.17	.11	.59	.57	.11						
7. LMX * Specific goals	.45	.94	.08	.02	-.16	-.05	-.01	-.10					
8. LMX * Difficult goals	.10	.68	.08	.07	-.03	-.01	.01	.00	.28				
9. LMX * Feedback	.43	.87	.07	.03	-.19	-.09	.00	-.06	.69	.16			
10. Gender	.47	.50	-.14	-.08	-.06	-.11	.00	.03	.03	.01	.05		
11. Age	40.46	9.47	-.25	-.24	-.04	-.09	-.12	-.13	-.02	.04	-.01	-.04	
12. Education	14.94	2.28	.14	.11	-.01	.01	.12	-.15	-.05	.01	-.06	-.04	-.04

For $r \geq .06$ $p < .05$ and for $r \geq .08$ $p < .01$.

self-ratings and leader ratings are common; r is .35 in Harris & Schaubroeck's (1988) meta-analysis. Nevertheless, all leadership variables (LMX, specific goals, difficult goals, and feedback) correlated positively with both perceptions of employee development.

The multilevel models with only intercepts showed intra-class correlations of *icc* = .21 for employees' perceptions of employee development and *icc* = .23 for leaders' perceptions of employee development. This indicates that the expected correlation between engagement in development activities of two employees who work under the same leader was .21 and .23 for employees' and leaders' perceptions of employee development, respectively.

The multilevel regression models with employee development as dependent variable are presented in Table 3. The first step of the analysis showed that gender had a weak direct negative relationship with employees' perceptions of employee development (β = -.092) and it was not related to leaders' perceptions of employee development (β = -.015). Older employees were less often engaged in development activities than were younger employees (β = -.175, β = -.206), and years of education were positively related to employee development (β = .137, β = .167).

Feedback was positively related to both leaders' and employees' perceptions of employee development (β = .163, β = .096) in the first step of the analysis. As expected, the relationship between feedback and employee development became non-significant in both models after the variables specific and difficult goals were added. The goal-setting variables were both positively related to employee development (specific goals: β = .342, β = .083; difficult goals: β = .138, β = .582). The procedure for testing mediation suggested that feedback had an indirect relationship with employee development through specific goals and through difficult goals. The indirect relationship via specific goals was β = .197, Z = 9.70, p < .001 for employees' perceptions of employee development, and it was β = .048, Z = 3.36, p < .001 for leaders' perceptions of employee development. The indirect relationship through difficult goals was β = .014, Z = 2.51, p < .01 for employees' perceptions of employee development and it was β = .058,

Table 3

Multilevel Model with Dependent Variable Employee Development (N = 1112).

	Employee development perceptions of employees				Employee development perceptions of leaders			
Variables	B	SE	β	σ	B	SE	β	σ
Step 1								
Gender	-.119	.047	-.092 **		-.024	.052	-.015	
Age	-.012	.002	-.175 ***		-.017	.002	-.206 ***	
Education	.039	.008	.137 ***		.057	.011	.167 ***	
Feedback	.119	.022	.163 ***		.084	.025	.096 ***	
Step 2								
Gender	-.083	.047	-.064 *		-.003	.041	-.002	
Age	-.010	.001	-.144 ***		-.009	.002	-.111 ***	
Education	.030	.007	.068 ***		.039	.008	.114 ***	
Feedback	-.034	.021	-.047		-.022	.256	-.025	
Specific goals	.210	.020	.342 ***		.078	.023	.083 ***	
Difficult goals	.111	.022	.138 ***		.560	.030	.582 ***	.154*

Table 3 (Continued).

Variables	Employee development perceptions of employees				Employee development perceptions of leaders			
	B	SE	β	σ	B	SE	β	σ
Step 3								
Gender	-.091	.044	-.070 *		-.006	.043	-.004	
Age	-.011	.001	-.160 ***		-.011	.002	-.134 ***	
Education	.028	.008	.098 ***		.037	.008	.108 ***	
Feedback	-.063	.025	-.086 **		-.080	.028	-.091 **	
Specific goals	.199	.019	.325 ***		.045	.023	.061 *	
Difficult goals	.098	.021	.122 ***		.548	.032	.569 ***	.154*
LMX	.080	.026	.101 **	.148**	.143	.022	.150 ***	
LMX * Specific goals	.009	.021	.013		-.052	.032	-.063	
LMX * Difficult goals	.052	.025	.054 *		.065	.028	.057 **	
LMX * Feedback	.083	.020	.111 ***		.069	.029	.077 **	
Difficult goals * Difficult goals					.069	.025	.066 **	
Deviance step 3			1717.6	1708.1			1795.4	1787.0

Significant random variance components are from the second level.

* p < .05, ** p < .01, *** p < .001.

$Z = 2.92$, $p < .01$ for leaders' perceptions of employee development. These results supported Hypothesis 1, Hypothesis 2, and Hypothesis 3; the setting of specific goals and the setting of difficult goals were positively related to employee development, and both goal-setting variables mediated the relationship between feedback and employee development.

Before the moderating effects of LMX were analyzed, all leadership variables were tested for non-linear relationships with employee development, and LMX and feedback were tested for non-linear relationships with specific goals and difficult goals. The analysis showed that only the setting of difficult goals had a significant non-linear relationship and that was with leaders' perceptions of employee development ($\beta = .066$). The other leadership variables did not have non-linear relationships. Thus, in the analysis with leaders' perceptions of employee development as the dependent variable, the quadratic term of difficult goals was included to ensure that the interaction between LMX and difficult goals could be attributed to the interacting variables and not to a non-linear relationship of setting difficult goals.

The hypothesized conditional variable LMX was added to the analysis in the third step. As shown in Table 3, the LMX variable contributed significantly to employee development in both models ($\beta = .101$, $\beta = .150$). At an average level of LMX, a negative relationship between feedback and employee development emerged in both models ($\beta = -.086$, $\beta = -.091$). The goal-setting variables still mediated the relationship between feedback and employee development in high LMX conditions, but they no longer mediated this relationship completely in the medium and lower LMX conditions.

The interaction term of LMX and specific goals was not significant in either model. However, the data did not provide definite evidence of the non-existence of an interaction effect between LMX and specific goals. As can been seen in the correlation matrix, the interaction term of LMX and specific goals and the interaction of LMX and feedback were strongly correlated ($r = .69$). Rerunning the analyses without the interaction term of LMX and feedback showed a significant interaction term of LMX and

specific goals in the model with employees' perceptions of employee development as the dependent variable (β = .092, p < .01), but not in the model with leaders' perceptions of employee development as the dependent variable. Nevertheless, we conclude that we did not find sufficient evidence to support Hypothesis 4.

The interaction term of LMX and difficult goals was significant in both models (β = .054, β = .057). For an 80% interval of LMX, the relationship of difficult goals with employees' perceptions of employee development ranged from β = .052 to β = .192 and with leaders' perceptions of employee development from β = .495 to β = .642. Also, LMX moderated the relationship between feedback and employee development. The interaction term of LMX and feedback was significantly and positively related to employee development in both models (β = .111, β = .077). For an 80% interval of LMX, the relationship of feedback with employees' perceptions of employee development ranged from β = -.229 to β = .057 and with leaders' perceptions of employee development from β = -.190 to β = .008. Thus, the relationship of setting difficult goals with employee development was positive when LMX conditions were of higher quality, but it was much lower to non-significant in the lowest LMX conditions. Feedback had a direct negative relationship with employee development in the medium and lower LMX conditions and approximately a zero relationship in the highest LMX conditions. We conclude that Hypothesis 5 and Hypothesis 6 were supported.

We also tested the moderation effects of LMX on the relationships between feedback and the setting of specific goals and between feedback and the setting of difficult goals; see Table 4. The results showed that feedback had a positive relationship with specific goals (β = .426) and LMX did not moderate this relationship. The relationship between feedback and the setting of difficult goals, however, varied from β = -.058 to β = .104 for an 80% interval of LMX. This suggests that, in high LMX relationships, positive action was taken upon feedback by raising goal difficulty, and negative action followed feedback in low LMX conditions in the lowering of

goal difficulty. We conclude that we did not find support for Hypothesis 7 and that we found support for Hypothesis 8.

Table 4

Multilevel Model with Specific Goals and Difficult Goals as Dependent Variables (N = 1112).

	Specific goals			Difficult goals		
Variables	B	SE	β	B	SE	β
Gender	-.150	.051	-.071 **	-.013	.059	-.008
Age	-.004	.003	-.032	-.013	.003	-.152 ***
Education	.021	.015	.045	.027	.011	.076 **
Feedback	.507	.043	.426 ***	.021	.039	.023
LMX	.334	.051	.259 ***	.142	.034	.144 ***
LMX * Feedback	.008	.019	.007	.059	.031	.063 *

* p < .05, ** p < .01, *** p < .001.

Tests of the random variance components showed that most regression coefficients were stable across groups. However, the relationship of LMX with employee development varied across groups from β = -.140 to β = .342 for an 80% interval in the model with employees' perceptions of employee development as the dependent variable. The relationship of difficult goals with leaders' perceptions of employee development varied across groups from β = .363 to β = .775 for an 80% interval. For both LMX and difficult goals, the varying coefficients related to employees working under the same leader.

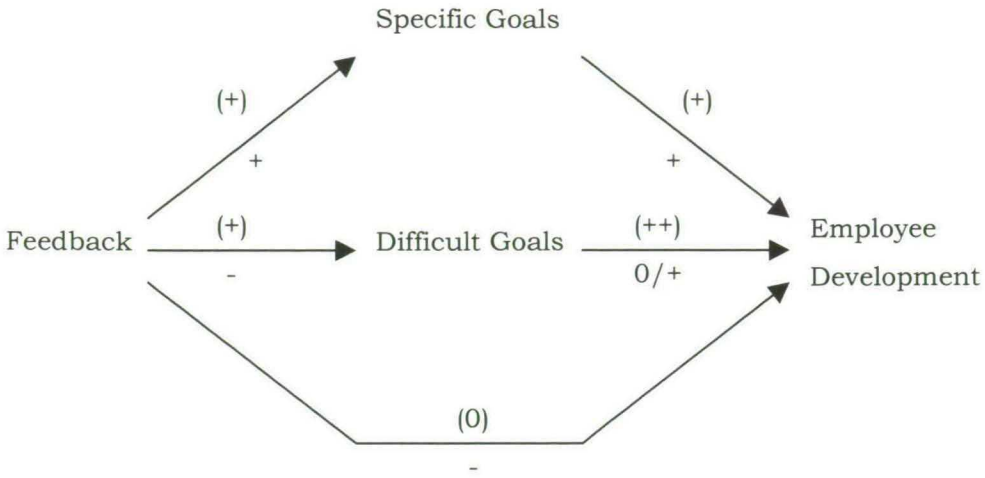
The variable difficult goals had a stronger correlation with leaders' perceptions of employee development than did LMX, specific goals, and feedback. LMX, specific goals, and feedback, on the other hand, had a stronger correlation with employees' perceptions of development than did difficult goals. Furthermore, LMX, specific goals, and feedback had a stronger correlation with each other than with difficult goals. This may indicate a form of common source bias and some inflation of the

correlation coefficients between the variables that were measured using the same source. This was possibly reflected in the high regression coefficients for difficult goals in the regression on leaders' perceptions of employee development; see Table 3. Despite this bias, the relationships of the main variables and the interaction terms with employee development were in the same direction in both models. In addition, the ratio of the independent variables' total variance in standardized terms to their unique variance (Variance Inflation Factor ≤ 2.06) was well below Myers' (1990) critical value (VIF > 10), indicating that the regression coefficients were reasonably stable estimates and that there were no problems of multicollinearity.

Discussion

We argued that the goal-setting effect and the provision of feedback, both concerning employees' development behavior, are more effective in high LMX relationships than in low LMX relationships. The results showed that the setting of specific goals and the setting of difficult goals were positively related to employee development. The positive relationship between feedback and employee development was mediated by the setting of specific and difficult goals and became negative in medium and low LMX conditions. Clear support was found for positive LMX moderation effects on the relationships between the setting of difficult goals and employee development, feedback and the setting of difficult goals, and feedback and employee development. LMX moderation of the relationship between specific goals and employee development was unclear owing to mixed findings. LMX did not moderate the relationship between feedback and specific goals. Based on our findings, we constructed the model presented in Figure 1.

The present findings are unique compared to those of previous studies. Although Maurer, Pierce, and Shore (2002) suggested that LMX moderates the relationship between leader support and employee development, as far as we know, the present study is the first in which this moderation effect



Plusses and minuses between brackets refer to high LMX relationships.
Plusses and minuses without brackets refer to low LMX relationships.
Figure 1: LMX Moderating Leaders' Guidance of Employee Development.

was demonstrated empirically. LMX takes on a new aspect as a result of this finding: in higher LMX relationships, leaders not only put more effort into facilitating the functioning of employees (Graen & Scandura, 1987), but the facilitation is also more effective. This implies that an LMX relationship is not only a theoretical causal variable for employees' positive work attitudes and outcomes, but it is also a conditional variable that affects the effectiveness of leadership behaviors.

The present findings also suggest that both positive and negative reciprocity effects can be found in organizations (Sparrowe & Liden, 1997; Uhl Bien & Maslyn, 2003). In the highest LMX conditions, leaders and employees worked positively together to enhance the employees' development behavior; when more feedback was provided the goals were more difficult and difficult goals had the strongest positive relationships with employee development. In the lowest LMX conditions, however, it seemed that leaders did not want to invest in employees and employees more often rejected development support, because leaders' feedback went together with lower goal difficulty and the setting of difficult goals had weaker relationships with employee development.

Although we expected that the positive relationship between feedback and employee development would be mediated by the setting of specific goals and difficult goals, as described in goal-setting theory (Locke & Latham, 1990), we did not expect a negative relationship between feedback and employee development in medium and low LMX conditions. Locke and Latham (1990) mentioned that feedback is mediated by psychological processes that include goal adjustment and self-efficacy. Mediation by self-efficacy seems plausible in the present context and may explain the negative relationship between feedback and employee development in medium and low LMX conditions. Self-efficacy has been found to be positively related to employee development (Birdi et al., 1997; Maurer, Weiss, & Barbeite, 2003; Noe & Wilk 1993). Leaders who provide employees with development feedback suggest that employees have to learn; that their knowledge and skills are not sufficient for the current or future job, which may be interpreted as feedback on a deficiency. In lower LMX conditions, leaders probably do not show the empathy necessary to avoid a negative connotation and to avoid the negative consequences of feedback on self-efficacy (Bandura, 1997).

The present study is also unique in that we tested the two main goal-setting propositions concerning specific and difficult goals in a large-scale field-study with employee development behavior as dependent variable. The findings verified the extensive list of goal-setting effects that have been found in previous experimental studies (Locke and Latham, 1990). Special in this case is that employee development does not concern only simple tasks, but also concerns a complex behavioral repertoire consisting of various behaviors and tasks. The results suggest that goal-setting may be used not only to obtain better performance in tasks, but also to induce desirable behavioral repertoires, such as development behavior.

The findings contradict Locke and Latham's (1990, 133) statement 'that people use to obey authority figures' by which they explained why assigned goals in general initiate goal-setting effects. Obedience may apply to an experimental context where participants and instructors have only superficial relationships. Usually, superficiality is less when people have to

work intensively together as direct leaders and employees. The present findings suggested that a lack of trust, respect, and feelings of obligations in the eyes of employees make employees suspicious and they look out for their own interests rather than obey the leader.

The present study has some practical implications for organizations with an employee development program and for leadership training programs to stimulate employee development. First, it is questionable whether leaders should guide the development of employees when they have not a high quality LMX relationship: the goal-setting effect is lowered and feedback is negatively related to the setting of difficult goals and employee development. For the effective guidance of employee development, leaders should have a high LMX relationship with their employees for the strongest positive effects, suggesting that the quality of the LMX relationship needs to be given attention in development programs and training programs. An LMX relationship is not fixed; it can be enhanced. Regular contacts, showing interest, expressing expectations and personal information, and simply putting an effort into relationship development may increase the quality of an LMX relationship (Graen, Novak, & Sommerkamp, 1982; Maslyn & Uhl Bien, 2001; Scandura & Graen, 1984). To induce development behavior, organizational development programs and leadership training programs should also incorporate sound instructions for setting learning goals (see Locke & Latham, 1984; Locke & Latham, 1990).

A limitation of the present study is that the cross-sectional design prevents the drawing of conclusions about causality. Another limitation may be some common source bias in employees' and leaders' questionnaires. However, it seems that this drawback was eliminated well enough, because the conclusions in the present study were the same for both employees' and leaders' perceptions of employee development.

The finding that goal-setting seems to work for employee development and that the goal-setting theory can be tested in survey studies opens a range of new research topics. Survey studies of goal-setting in relation to work-related behaviors that may benefit the organization, such as

performance, initiative, altruism, organization citizenship behavior, innovative behavior, and employee development, may help in providing a better understanding of how organizational effectiveness may be stimulated. The quality of an LMX relationship is probably also relevant for the effectiveness of goal-setting and feedback when it concerns these other behaviors. Experimental and longitudinally designed field-studies of existing leader-member exchange relationships are needed in order to provide more conclusive findings about causality.

LEADERSHIP AND EMPLOYEE DEVELOPMENT: THE MEDIATING ROLE OF EMPLOYEES' SELF-EFFICACY

Owing to developments such as globalization, technological advancements, and changing legalization, organizations, jobs, and work processes are changing (Bridges, 1995; Cooper & Burke, 2002; Gephart, 2002; Howard, 1995; Rifkin, 1995). These developments influence job requirements and demand that employees adapt to changing circumstances. Developing employees engage in learning activities, and, by doing so, they facilitate the development of organizational capabilities to anticipate and adapt to internal and external organizational changes (Senge, 1990). Leaders are supposed to influence employees' engagement in learning activities (Birdi, Allan, & Warr, 1997; Kozlowski & Farr, 1988; Kozlowski & Hults, 1987; Noe, 1996). Positive relationships have been found between leadership characteristics, such as Leader-member exchange (LMX) (Wakabayashi & Graen, 1984; Wayne, Shore, & Liden, 1997), feedback (Bailey & Fletcher, 2002), and inspirational leadership (Dvir, Eden, Avolio, & Shamir, 2002), and employee development. It remains unclear, however, how leaders may move employees into development activities. Knowing how this can be done would contribute to a more efficacious stimulation of employee development.

Employees' self-efficacy may play a mediating role in the relationship between leadership characteristics and employee development. Self-efficacy is founded in social cognitive theory. It 'refers to beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments' (Bandura, 1997, 3). Self-efficacy is an important determinant not only of work-related performance (Sadri & Robertson, 1993; Stajkovic & Luthans, 1998), but also of employee development (Birdi et al., 1997; Maurer, Mitchell, & Barbeite, 2002; Maurer & Palmer, 1999; Maurer & Tarulli, 1994; Maurer, Wrenn, Pierce, Tross, & Collins, 2003; Noe & Wilk, 1993). Various studies have shown that different leadership characteristics influence employees' behavior

through employees' self-efficacy (Dvir et al., 2002; Eden, 1990, 1992; Shamir, House, & Arthur, 1993).

We investigated the relationships between various leadership characteristics and employee development, and the mediating role of employees' self-efficacy. The present field study is relevant for several reasons. First, it was investigated how leaders may stimulate employees to engage in development activities, and whether employees' self-efficacy played a mediating role. Second, because different leadership characteristics were included, more insight was obtained into the relative contributions of these characteristics to employees' self-efficacy and development. This knowledge may be useful for enhancing employees' motivation, reducing employees' resistance, and overcoming employees' psychological barriers to participating in training and development programs, and for improving the effectiveness of leaders' stimulation of employees' self-efficacy and employees' engagement in learning activities.

Self-efficacy

According to social cognitive theory, individuals and their environment are bi-directionally related: individuals react to external circumstances, but they are also capable of proactively choosing and shaping their environment (Bandura, 1986, 1997, 2001). Through the exercise of forethought, self-monitoring, performance self-guidance via personal standards, and corrective self-reactions, individuals make their intentions happen (Bandura, 1991, 2001). Self-efficacy informs individuals to what extent cognitive, social, emotional, and behavioral sub-skills are present to deal effectively with the circumstances and to realize goals/ intentions. Self-efficacy is by definition behavior specific; it is subjective and it does not necessarily mirror true capabilities (Bandura, 1997). Individuals act on the basis of self-efficacy, but their action and the action's reflection in the (social) environment informs them how efficacious they have really been, which may lead to self-efficacy adjustment (Bandura, Adams, & Beyer, 1977). The most influential sources of efficacy beliefs are mastery experiences, which involve successfully attaining goals and acquiring cognitive, behavioral, and self-regulatory tools to execute courses of action

and to deal with changing circumstances (Bandura, 1997). Employee development implicates mastery experiences; thus, it is not only affected by self-efficacy, but also determines it. Such a bi-directional relationship, self-efficacy determines employee development and employee development determines self-efficacy, has serious consequences for the establishment of the strength of the relationships between external influences (e.g., leadership characteristics) and self-efficacy and between external influences and individuals' behavior (e.g., development behavior). The consequences are discussed in the analyses section below. We hypothesized the following:

Hypothesis 1: Employees' self-efficacy and employee development are bi-directionally related.

Leadership, self-efficacy, and employee development

The following leadership characteristics and their relationships with employee development through employees' self-efficacy were considered: the leader-member exchange (LMX) relationship, the setting of specific and difficult goals, feedback, and inspirational leadership.

LMX

An LMX relationship is a relationship of trust, respect, and obligation between a leader and an employee (Graen & Uhl Bien, 1995). Positive relationships between LMX and employee development have been found (Graen & Scandura, 1987; Graen, Wakabayashi, Graen, & Graen, 1990; Wakabayashi & Graen, 1984; Wayne, Liden, Kraimer, & Graf, 1999). We propose that this relationship is mediated by employees' self-efficacy, for several reasons. First, in some studies, LMX was positively related to employees' self-efficacy (Murphy & Ensher, 1999; Schyns & von Collani, 2002). Second, the role-making model (Graen & Cashman, 1975; Graen & Scandura, 1987) states that, after an employee's successes in trial assignments, a leader's expectations, respect, trust, and feelings of obligation for that employee increase, which strengthen the employee's efficacy beliefs: the employee's belief that he/she makes a significant

contribution to the work, the leader, and the department is strengthened. Third, these successes in trial assignments lead to more participation in decision-making, which has positive consequences for self-efficacy (Latham, Winters, & Locke, 1994). Fourth, leaders are inclined to form a group of trustees; these are the employees in a high LMX condition. These group members are usually the most effective employees, and through a mechanism of social identity, self-definition based on the social environment (Ashforth & Mael, 1989; Mael & Ashforth, 2001), the group's effectiveness positively affects members' self-efficacy. Finally, a low LMX condition may result in negative moods, because of feelings of tension between leader and employee, with negative consequences for the employee's self-efficacy (Kavanagh & Bower, 1985). These arguments led to the following hypothesis:

> *Hypothesis 2: Employees' self-efficacy mediates the relationship between LMX and employee development.*

Goal-setting

According to goal-setting theory, goals are 'the object or aim of action', and they have two main dimensions: goal difficulty and goal specificity (Locke & Latham, 1990, 2002). Research has repeatedly shown that the setting of more specific and more difficult goals has positive effects on several behaviors of employees (Locke & Latham, 1990, 2002). Kanfer and Ackerman (1989) suggested that setting difficult goals does not lead to better performance in complex tasks. However, when difficult goals are reformulated as high learning goals, in terms of discovering how to solve a complex task, then the goal-setting effect is reestablished (Winters & Latham, 1996). Learning goals induce efforts to understand the complex task and to find strategies for the right solution. Striving to reach a difficult learning goal is in itself a learning activity.

Several authors have suggested that the setting of specific and difficult goals stimulates employees' self-efficacy (Earley & Lituchy, 1991; Eden, 1984, 1988; Garland, 1985; Locke & Latham, 1990). Garland (1985) argued that individuals with difficult goals develop effective strategies that

strengthens their self-efficacy. Garland also stated that goals have an anchoring influence on self-efficacy. According to Garland, errors or biases in the estimation of the likelihood of events underlie this influence process. One such bias is "wishful thinking": people expect to happen what they hope for. Also, difficult goals and tasks reside prominently in memory, and individuals estimate the likelihood of events more positively when the events are easily accessible in memory.

In goal-setting theory, the motivational effect of assigned goals is partly explained through the mediating effects of self-efficacy (Locke & Latham, 1990; 2002). Eden (1984, 1988) stated that the setting of specific and difficult goals expresses normative beliefs; employees who obtain difficult goals are being told that they are capable of accomplishing difficult tasks. Such information persuades employees that they are effective, and stimulates employees' self-efficacy. The hypotheses were as follows:

> *Hypothesis 3: Employees' self-efficacy mediates the relationship between setting specific learning goals and employee development.*
>
> *Hypothesis 4: Employees' self-efficacy mediates the relationship between setting difficult learning goals and employee development.*

Feedback

Leaders are among employees' most important sources of information (Ashford, 1993; Ashford & Tsui, 1991). Feedback concerns leaders' differentiated provision of information about employees' performance and development, and it is one of the information cues people use to evaluate their performance. In general, it is believed that feedback under the right conditions leads to performance improvements (Ilgen, Fisher, & Taylor, 1979). Information about performance and development is necessary to attain goals and to develop to a preferred state (Bandura & Cervone, 1983; Locke & Latham, 1990, 2002). Meta-analyses have shown, however, that feedback may have positive, zero, and negative effects on performance regardless of the feedback sign (Kluger & DeNisi, 1996). These different

effects may (partly) be explained by the various psychological processes, such as personal goal regulation and self-efficacy adjustment, that follow feedback. Research has shown that through positive feedback, even bogus feedback, self-efficacy can be enhanced (Bandura, 1997; Bandura & Cervone, 1986; Prussia & Kinicki, 1996). However, negative feedback may have negative consequences for employees' self-efficacy (Bandura, 1997; Nease, Mudgett, & Quinones, 1999).

Leaders' feedback concerning employees' development carries with it the message that employees have to change; their knowledge and skills are or will no longer be sufficient for their current or their future job. Moreover, developing employees are in a process that involves many forms of learning, which often require many attempts before things go right. Leaders' development feedback involves corrective feedback and may have a negative connotation with negative consequences for employees' self-efficacy (Nease et al., 1999). The hypothesis was as follows:

> *Hypothesis 5: Employees' self-efficacy mediates the relationship between feedback and employee development.*

Inspirational leadership

Several leadership constructs, such as charismatic and transformational leadership, emphasize the inspirational influence of leaders by appealing to employees' values and ideals (Bass, 1985; Bass & Avolio, 1990; Burns, 1978). Inspirational leaders are thought to develop employees to their full potential (Bass & Aviolo, 1990), and it is believed that they influence employees by satisfying self-actualization needs (Burns, 1978). Some authors have suggested that inspirational leaders influence employees through employees' self-efficacy (Conger & Kanungo, 1988; Shamir et al., 1993). Dvir et al. (2002) found in an inspirational training experiment for leaders that the leaders in the experimental condition had more impact on employees' self-efficacy and development than had the leaders in the control condition. The relationship between employees' self-efficacy and employee development was not investigated. Shamir et al. (1993) gave some suggestions as to how inspirational leaders

may increase employees' self-efficacy. Leaders may do so by expressing high expectations and confidence in the employees' ability to meet such expectations (House, 1977; House, Woycke, & Fodor, 1988). Also, they may emphasize the relationships between effort and important values, giving an increased sense of moral correctness. Complete faith in the moral correctness of one's convictions gives one the strength and confidence to behave accordingly. Furthermore, by articulating an ideological vision and recruiting employees who share the values of the vision, leaders create a sense of identity and a sense of efficacy resulting from being a member of the collective. The last hypothesis was as follows:

> *Hypothesis 6: Employees' self-efficacy mediates the relationship between inspirational leadership and employee development.*

In sum, the six hypotheses result in the relationships presented in Figure 1: self-efficacy mediates the relationships of LMX, setting specific goals, setting difficult goals, feedback and inspirational leadership with employee development, and self-efficacy and employee development are bi-directionally related.

Figure 1: The Hypothesized Model.

Method

Sample and procedure

A total of 1112 employees and their leaders (N = 233) from six Dutch organizations participated in the present study: a health care institution (N = 302), a police department (N = 188), a penitentiary (N = 156), a social service (N = 102), a security service (N = 94), a vocational training school (N = 62), and a high-tech company (N = 208). Employees' ages ranged from 17 to 65 years (M = 40.46 years, SD = 9.47 years); 47% were men; and the average number of years of education was 14.94 with a standard deviation of 2.28. A person starts primary school at the age of 4, and 18 years later may have completed a course of studies at university.

In total, 3295 employees received a questionnaire, 1546 (47%) of which were returned; 1112 (34%) questionnaires could be matched with leaders' questionnaires. Chi-square tests for non-response bias indicated that there were no differences between respondents and non-respondents concerning age, gender, and educational level.

Measures

Two questionnaires were composed, one for employees and the other for leaders. The employees' questionnaire contained measures for employee development, self-efficacy, LMX relationship, goal specificity, feedback, inspirational leadership, and background variables (e.g., age, gender, and education). The leaders' questionnaire contained measures for goal difficulty and employee development. All items are presented in Table 1.

Employee development. Employee development was viewed as an employee's engagement in activities that encourage learning and improve the employee's performance in his/ her current job as well as in future jobs. Because reliable objective data sources of employees' engagement in development activities were not available in the participating organizations, we asked both employees and their direct leaders for this information. Derived from previous studies (Birdi et al., 1997; Maurer et al., 2002; Maurer & Tarulli, 1994; Maurer, Weiss, & Barbeite, 2003; Noe & Barber,

1993), nine items of relevant development activities were presented to employees and their direct leaders, with the items referring to the employees' engagement in development activities in both cases. The five-point scale ranged from 1 (*never*) to 5 (*very often*). Because of cross-loading in the factor analysis, one item had to be deleted. Cronbach's alphas were .85 and .92 for the employee and the leader scales, respectively.

Self efficacy. Parker's (1998) measure of 'Role breadth self-efficacy' was used to assess self-efficacy. This form of self-efficacy refers to the extent to which people feel confident that they are able to perform a broader and more proactive role, beyond prescribed requirements. Because three items did not apply to every organization, only seven out of the ten items were assessed in all participating organizations.The five-point scale ranged from 1 (*not at all confident) to 5 (very confident).* Cronbach's alpha was .89.

Leader-member exchange relationship (LMX). To measure the LMX relationship, Graen and Uhl Bien's (1995) seven-item scale was used. Cronbach's alpha was .92.

Specific goals. No scale was available to measure the specificity of development goals. Based on interviews and pilot studies, a six-item scale was developed and tested to measure the specificity of the goals that leaders and employees had set for the employees' work and development. Employees indicated the goal specificity from 1 (*no goals*), to 2 (*very unclear goals*), to 5 (*very specific goals*). Cronbach's alpha was .93.

Difficult goals. As for specific goals, no scale was available to measure the goal difficulty of development goals. Based on interviews and pilot studies, a six-item scale, similar to the specific goals scale, was developed and tested to measure how difficult the goals were that leaders had set with employees. Leaders were asked to respond to this scale, instead of employees, to avoid confusion between goal difficulty and self-efficacy (Locke & Latham, 1990). Leaders indicated how difficult the goals were for the average person on the job on a scale from 1 (*no goals*), to 2 (very easy goals), to 5 (*very difficult goals*). Cronbach's alpha was .87.

Feedback. Based on Kluger and DeNisi's (1996) concept of feedback on task-learning processes, four items were developed and tested to measure

leaders' feedback concerning the employees' development and performance. The items' anchors ranged from 1 (*strongly disagree*) to 5 (*strongly agree*). Cronbach's alpha was .87.

Inspirational leadership. Nine items were selected from three sub-scales (idealized influence, inspirational leadership, and intellectual stimulation) of Bass and Avolio's (1990) MLQ questionnaire to measure employees' perceptions of their leaders' inspirational behavior. Employees indicated on a scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), to what extent they agreed with the statements. Factor analysis showed that this scale measured one construct. Cronbach's alpha was .93.

Control variable. We controlled for demographic variables that have been found to be related to employee development: age (Birdi et al., 1997; Maurer, et al. 2003), gender (Frazis, Gittleman, & Joyce, 2000; Green, 1993; Shields, 1998), and education (Altonji & Spletzer, 1991; Birdi et al., 1997). Men were dummy coded zero and women one, and education was measured in the number of years that courses of education were successfully attended.

Factor analysis

The results of two factor analyses using oblique rotation are presented in Table 1: one analysis with employees' perceptions of employee development as the dependent variable and the other with leaders' perceptions of employee development as the dependent variable. In both analyses, seven factors emerged, explaining 66% and 68% of the total variance. All items loaded at least .39 on the scale they were supposed to load on, with cross-loading not higher than .23.

Table 1

Pattern Matrix of a Factor Analysis of Employee Development, Self-Efficacy, LMX, Specific Goals, Difficult Goals, Feedback, and Inspirational Leadership

	Factors						
Items	1	2	3	4	5	6	7
Employee development:							
I spend time following a course or	.63						
educational program.	(.54)						
I am working to extend my knowledge and	.76						
skills.	(.82)						
I perform learning tasks that are not part of	.50						
my job.	(.62)						
I spend time planning and realizing my	.59						
career.	(.66)						
I go to my supervisor to discuss how I can	.51						
make progress.	(.68)						
Within my function, I am looking for a	.39						
method to improve my work.	(.82)						
Within my job, I look for activities from	.70						
which I can learn.	(.77)						
I continually learn new skills for my job.	.70						
	(.80)						
Self-efficacy:							
How confident would you feel?							
Analyzing a long-term problem to find a		.67					
solution.		(.70)					
Designing new procedures for your work		.70					
area.		(.70)					
Representing your work area in meetings		.77					
with senior management.		(.74)					
Helping to set targets/ goals in your work		.76					
area.		(.77)					

Table 1 (Continued)

Items	Factors						
	1	2	3	4	5	6	7
Contacting people outside the company		.67					
(e.g., suppliers, customers) to discuss		(.71)					
problems.							
Presenting information to a group of		.73					
colleagues.		(.74)					
Visiting people from other departments to		.74					
suggest doing things differently.		(.74)					
Leader-member exchange:							
Do you know where you stand with your			-.81				
leader ... do you usually know how satisfied			(-.80)				
your leader is with what you do?							
How well does your leader understand your			-.82				
job problems and needs?			(-.80)				
How well does your leader recognize your			-.80				
potential?			(-.78)				
Regardless of how much formal authority			-.82				
he/ she has built into his/her position,			(-.81)				
what are the chances that your leader							
would use his/her power to help you solve							
problems in your work?							
Again, regardless of the amount of formal			-.66				
authority your leader has, what are the			(-.66)				
chances that he/ she would "bail you out"							
at his/her expense?							
I have enough confidence in my leader that			-.60				
I would defend and justify his/her decision			(-.59)				
if he/she were not present to do so.							
How would you characterize your working			-.55				
relationship with your leader?			(-.54)				

Table 1 (Continued)

Items	Factors 1	2	3	4	5	6	7
Goal specificity:							
Have you set clear goals, together with your supervisor, for your ...							
performance levels in your current job?				-.71			
				(.68)			
personal development?				-.86			
				(.85)			
extension of knowledge and skills?				-.93			
				(.94)			
participation in an educational program or course?				-.82 (86)			
performance of learning tasks within the function?				-.81 (82)			
for working towards another job?				-.70			
				(.70)			
Goal difficulty:							
Ignoring the employees' capability, how difficult would you say that the following goals are for the average person on this job?							
Goals for performance levels in employee's current job.					.79 (.81)		
Goals for personal development.					.85		
					(.92)		
Goals for extension of knowledge and skills.					.86		
					(.83)		
Goals for participation in an educational program or course.					.59 (.54)		
Goals for the performance of learning tasks within the function.					.76 (.69)		

Table 1 (Continued)

Items	Factors						
	1	2	3	4	5	6	7
Feedback:							
My supervisor ...							
informs me of how I should perform specific tasks if something goes wrong.						.74 (.66)	
informs me of whether it will benefit my career to follow a specific course or training program.						.57 (.56)	
informs me of how I should undertake new tasks.						.82 (74)	
informs me of which skills I can improve.						.71 (.67)	
Inspirational leadership:							
My supervisor ...							
articulates a compelling vision of the future.							.71 (.71)
envisions exciting new possibilities.							.76 (.77)
talks enthusiastically about what needs to be accomplished.							.75 (.77)
gets me to look at problems from many different angles.							.68 (.68)
encourages us to rethink ideas which had never been questioned before.							.66 (.66)
suggests new ways of looking at how we do our jobs.							.60 (.61)
talks to us about his/her most important values and beliefs.							.72 (.74)
displays conviction in his/her ideals, beliefs, and values.							.74 (.75)
behaves in ways that are consistent with his/her expressed values.							.78 (.80)

Table 1 (Continued)

Items	Factors 1	2	3	4	5	6	7
Deleted item:							
I am trying to find another position (employee development).							

The loading without brackets is for the model with employees' perceptions of employee development as the dependent variable; the loading underneath, between brackets, is for the model with leaders' perceptions of employee development as the dependent variable.

Analyses

Structural equation modeling techniques with maximum likelihood estimation were used to test the hypotheses. A latent variable employee development, consisting of both employees' and leaders' perceptions of employee development, was constructed to deal with the different perceptions and to simplify model identification. A latent variable for common source bias within leaders' questionnaires was also added to the model, with regression weights fixed to one for its relationship with difficult goals and with leaders' perceptions of employee development. Based on the recommendations of Fan, Thompson, and Wang (1999) and Hu and Bentler (1998; 1999), the following fit indices and their cutoff levels were used to test the fit of the model: the Comparative Fit Index (CFI, cutoff ≥ .95), the Standardized root mean squared residual (SRMR, cutoff ≤ .08), and the Root Mean Squared Error of Approximation (RMSEA, cutoff ≤ .06). Because of its widespread use, we also used the Adjusted Goodness-of-Fit Index (AGFI, cutoff ≥ .95).

The indirect relationships of the leadership characteristics with employee development through employees' self-efficacy were tested for significance using the procedure described by Baron and Kenny (1986) and Kenny, Kashy, and Bolger (1998). To prevent non-identification of the research model, and to fulfill the sufficient rank condition for model identification (Kline, 1998), the model was tested in two steps. In the first step, self-efficacy was left out of the model. Next, we tested which control

variable was not related to employees' self-efficacy; it was the variable age. In the second step, self-efficacy was entered into the model and no path was drawn from age to employees' self-efficacy; the non-significant leadership characteristics from the first step of the analysis were no longer related to employee development.

The data were hierarchically nested; several employees worked under the same leader in one of the 36 divisions of one of the seven organizations. Analyzing nested data as if they came from one single level violates the assumption of independent and identically distributed observations. When nested data are analyzed as single-level data, the effective sample size is smaller than the total number of cases, with the consequence that the standard errors are estimated too small (Hox, 2002). For the present study, this meant that, with an average intra-class correlation of .22 between employees' and leaders' perceptions of employee development and a total design effect of 1.83, the sample size of 1112 cases was reduced to an effective sample size of 608 cases. We analyzed data as if they were single-level data because the model was too complex for multilevel analysis and analyzing multilevel data as single-level data does not lead to overly misleading results when design effects are smaller than 2 (Maas & Hox, 2004, Muthén & Satorra, 1995). To obviate spurious results, the standard errors of the regression coefficients were multiplied by 1.35 to adjust them to the effective sample size.

The bi-directional relationship between employees' self-efficacy and employee development in the present model had important consequences for the estimation of paths compared to a one-directional path analysis. In a one-directional model with the variables A → B → C, the correlation coefficient, if desired controlled for other variables, would have sufficed to establish a path between A and B, because an indirect relationship between A and B through C would not have existed. However, in a bi-directional model, where B and C were both mediating and dependent variables (A → B → C and A → C → B), the relationship between A and B consisted of a direct and indirect effect. In an estimation of the direct effect of A on B, the correlation coefficient (possibly controlled for other variables)

needed to be corrected for the indirect effect. For the present model, this meant that, to establish a path between a leadership characteristic and self-efficacy, this path needed to be controlled for the indirect relationship of leadership characteristic → employee development → self-efficacy, and the path between the leadership characteristic and employee development needed to be controlled for the indirect relationship of leadership characteristic → self-efficacy → employee development.

Results

The means, standard deviations, and inter-correlations of the variables are presented in Table 2. The moderate correlation of $r = .40$ between employees' and leaders' perceptions of employee development is not uncommon for a correlation between leader ratings and self-ratings; r was .35 in Harris & Schaubroeck's (1988) meta-analysis. The leadership characteristics that were measured using employees' questionnaires were inter-correlated (ranging from $r = .51$ to $r = .69$). However, the ratio of the independent variables' total variance in standardized terms to their unique variance (Variance Inflation Factor ≤ 2.38) was well below Myers' (1990) critical value (VIF > 10), indicating that the regression coefficients were reasonably stable estimates and that there were no problems of multicollinearity.

For the paths of the first step of the analysis, see Table 3. This first-step model had a good fit: SRMR = .01, CFI = .99, RMSEA = .05, and AGFI = .96. The control variables age ($\beta = -.354$, $p < .001$) and gender ($\beta = -.136$, $p < .01$) were negatively related, and education ($\beta = .134$, $p < .01$) was positively related to employee development. The variables LMX ($\beta = .180$, $p < .001$), specific goals ($\beta = .422$, $p < .001$), and difficult goals ($\beta = .175$, $p < .001$) were positively related to employee development. Feedback ($\beta = -.163$, $p < .01$) had a significant negative relationship with employee development, and inspirational leadership had no direct relationship with employee development. Thus, for LMX, specific goals, difficult goals, and feedback, there was a relationship with employee development to be mediated.

Table 2

Means, Standard Deviations, and Intercorrelations of the Variables (N = 1112).

		Mean	SD	1	2	3	4	5	6	7	8	9	10
1.	Employee development Perceptions of employees	2.84	.65										
2.	Employee development Perceptions of leaders	2.76	.78	.40									
3.	Self-efficacy	3.32	.66	.44	.23								
4.	LMX	3.35	.82	.23	.22	.14							
5.	Specific goals	2.78	1.06	.38	.23	.11	.51						
6.	Difficult goals	2.57	.81	.23	.61	.12	.15	.22					
7.	Feedback	3.06	.89	.17	.11	-.09	.59	.57	.11				
8.	Inspirational leadership	3.15	.78	.21	.19	.09	.69	.54	.17	.64			
9.	Gender	.47	.50	-.14	-.08	-.24	-.06	-.11	.00	.03	-.02		
10.	Age	40.46	9.47	-.25	-.25	-.10	-.04	-.09	-.12	-.13	-.08	-.04	
11.	Education	14.94	2.28	.14	.11	.25	-.01	.01	.12	-.15	.03	-.04	-.04

For $r \geq .06$ $p < .05$. For $r \geq .08$ $p < .01$.

Table 3
Paths of the Hypothesized Model (N = 1112).

	Hypothesized model			
	B	SE	β	
Step 1:				
LMX → Employee development	.096	.036	.180	**
Specific goals → Employee development	.173	.026	.422	***
Difficult goals → Employee development	.093	.030	.175	***
Feedback → Employee development	-.079	.034	-.163	*
Inspirational leadership → Employee development	.014	.041	.024	
Age → Employee development	-.016	.003	-.354	***
Gender → Employee development	-.119	.041	-.136	**
Education → Employee development	.026	.009	.134	**
Step 2				
Self-efficacy → Employee development	.186	.069	.250	**
Employee development → Self efficacy	.442	.145	.329	**
LMX → Employee development	.059	.038	.098	
Specific goals → Employee development	.183	.026	.399	***
Difficult goals → Employee development	.085	.027	.141	***
Feedback → Employee development	-.038	.036	-.069	
Inspirational leadership → Employee development	-	-	-	
LMX → Self-efficacy	.113	.042	.141	**
Specific goals → Self-efficacy	-.024	.041	-.039	
Difficult goals → Self-efficacy	.001	.032	.001	
Feedback → Self-efficacy	-.167	.038	-.227	***
Inspirational leadership → Self-efficacy	.038	.045	-.002	
Age → Employee development	-.015	.003	-.292	***
Gender → Employee development	-.08	.046	-.081	*
Gender → Self-efficacy	-.213	.049	-.162	***
Education → Employee development	.018	.009	.082	*
Education → Self-efficacy	.043	.011	.148	***

* p < .05, ** p < .01, *** p < .001.

The variable self-efficacy was entered into the model in the second step of the analysis; see Table 3. Because inspirational leadership was not significantly related to employee development in the first step of the analysis, and to ensure model-identification, the path between inspirational leadership and employee development was left out of the model. We checked whether the relationship between inspirational leadership and employee development would have been significant after entering self-efficacy into the model by testing models with a path between inspirational leadership and employee development and leaving out one of the paths between the other leadership characteristics and employee development. Not in one case a significant relationship between inspirational leadership and employee development emerged. The second step model had a reasonable fit: SRMR = .02, CFI = .99, RMSEA = .07, and AGFI = .93. The values for RMSEA and AGFI improved to .05 and .97 after deletion of the non-significant relationships between the leadership characteristics, self-efficacy, and employee development.

The second-step analysis showed that self-efficacy and employee development were indeed bi-directionally related (β = .250, p < .01; β = .329, p < .01). Thus, Hypothesis 1 was supported. Specific and difficult goals were positively related to employee development (β = .399, p < .001; β = .141, p < .001). The positive relationships between LMX and employee development and the negative relationship between feedback and employee development found in the first step of the analysis were not significant in the second step.

Concerning mediation, LMX was positively related (β = .141, p < .01) and feedback was negatively related (β = -.227, p < .001) to employees' self-efficacy. The variables specific goals, difficult goals, and inspirational leadership were not significantly related to employees' self-efficacy. Therefore, Hypothesis 3, Hypothesis 4, and Hypothesis 6 had to be rejected. The indirect relationships of LMX (z = 1.84, p < .05) and feedback (z = 2.26, p < .05) with employee development via employees' self-efficacy were both significant. Mediation was complete for these two variables. Thus, Hypothesis 2 and Hypothesis 5 were supported.

To test whether the coefficients were stable across the organizations, we conducted a multi-group analysis using the paths of the second step of the analysis, specified in Table 3, fixed across the participating organizations. The multi-group analysis showed a good fit: SRMR = .04, CFI = .97, RMSEA = .03, and AGFI = .89. With modification indices set at a significance level of $p < .01$, only one significant modification emerged. The relationship between LMX and self-efficacy was stronger in the high-tech company than in the other organizations ($\beta = .281$, $p < .001$). No convincing explanation for this difference was available. We conclude that the specified paths between the leadership characteristics, self-efficacy, and employee development, as specified in Table 3, were reasonably stable across organizations.

Discussion

The present study focused on the question of how leadership characteristics relate to employee development. It was hypothesized that employees' self-efficacy mediated this relationship. The point of departure was a model in which leadership characteristics were related to employees' self-efficacy and employee development and in which the latter two were bi-directionally related. The results are summarized in Figure 2.

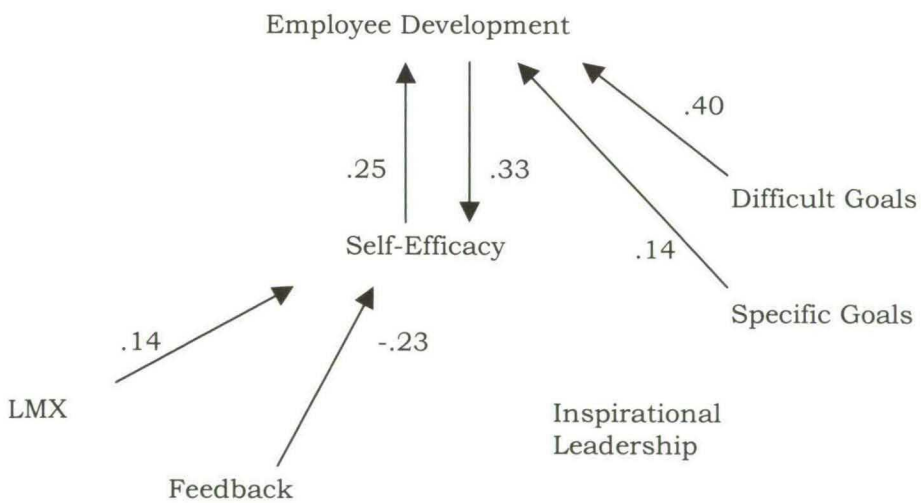


Figure 2: The Beta Weights of the Hypothesized Model.

The results suggest that employees' self-efficacy and employee development were indeed bi-directionally related. Specific goals and difficult goals had positive direct relationships with employee development, and these relationships were not mediated by employees' self-efficacy. LMX was positively related to employee development, which was completely mediated by employees' self-efficacy, and feedback was negatively related to employee development, which was also completely mediated by employees' self-efficacy. Inspirational leadership was not related to employees' self-efficacy or employee development.

The present results have several theoretical implications. First, the finding that setting goals has a direct relationship with employees' development and that LMX and feedback have an indirect relationship through employees' self-efficacy suggests that setting goals is more powerful than LMX and feedback in inducing a specific behavior such as employees' development behavior. This does not reduce the importance of LMX and feedback. Their relationship with employees' self-efficacy suggests that their effects may go beyond employees' development behavior to various effects on work-related attitudes and behaviors (Stajkovic & Luthans, 1998). Second, the findings of the present study lead us to reject the idea that goal-setting works through influencing self-efficacy (Eden, 1984, 1988; Garland, 1985; Locke & Latham, 1990, 2002). According to the present results, goal-setting leads to mastery experiences, which affect self-efficacy. The differences between this result and previous findings are due to the method of analysis, and more specifically the bi-directional relationship between employee development and self-efficacy. Reanalysis of previous studies (Earley & Lituchy, 1991; Garland, 1985) that reported a positive relationship between goal difficulty and performance through self-efficacy did not result in a positive relationship between objective goal difficulty and self-efficacy when this relationship was controlled for mastery experiences (objective goal difficulty → performance → self-efficacy). Positive short-term effects of assigning difficult goals on individuals' self-efficacy may occur, but as soon as the individual tries to

attain the goals, evaluation of the performance overrules the short-term effects of the assigned difficult goals on self-efficacy.

Third, Kluger and DeNisi (1996) found feedback to have positive, negative, or no effects on the performance of the feedback receiver regardless of whether the feedback was formulated positively or negatively. Negative effects of feedback on the feedback receiver's self-efficacy may explain its varying effects on performance. A negative feedback effect does not necessarily have its origin in a negative formulation. The feedback items used in the present study were not negatively formulated, but the underlying message was that employees had to change and that their available knowledge and skills were not, or would not remain, sufficient. Employees may have interpreted such feedback as information about their deficiencies. The negative relationship between feedback and self-efficacy may also be a reflection of reversed causality: employees low in self-efficacy received more feedback, because they performed less well, or because they did not engage in development activities on their own initiative.

The present study also has some practical implications. First, goal-setting seems to be most effective in stimulating employee development. It would be wise of leaders who aim to stimulate employee development to formulate specific and difficult goals focused on learning activities. Second, leaders should keep in mind that employees' self-efficacy benefits from a high LMX relationship, with positive consequences for employee development and work-related performance (Stajkovic & Luthans, 1998). Third, leaders should not be misled by the negative relationship between feedback and employee development through self-efficacy to stop giving feedback. Feedback is a necessary condition for goals to affect performance (Erez, 1977; Becker, 1978). Feedback providers may neutralize the possible negative feedback effects by providing feedback together with goal-setting and a high LMX relationship.

A limitation of the present study is the somewhat high inter-correlations between some variables. Employees' perceptions of the leadership characteristics inter-correlated. Such correlations between leadership variables are common (Den Hartog, 1997; Lowe, Kroeck, &

Sivasubramaniam, 1996; Podsakoff, MacKenzie, Moorman, & Fetter, 1990). The inter-correlations may be due to employees' inability to discern leadership characteristics, the leadership characteristics may occur together, or common source bias may be present. Also, the high inter-correlation between leaders' perceptions of employee development and goal difficulty may reflect some common source bias. We dealt with possible inflations of correlation coefficients in several ways. For the relationships between independent and dependent variables, we constructed a latent variable, employee development, that consisted of both employees' and leaders' perceptions. We also created a latent variable for leaders' perceptions of employees, which controlled for inflated effects of goal difficulty on leaders' perceptions of employee development. Another limitation of the present study was its correlational design, which did not allow conclusions about causality to be drawn.

In future studies, a longitudinal or experimental design may be used to address causality. Furthermore, future psychological studies should address procedures to handle bi-directionality, because this is probably more common in the real world than is taken into account in psychological research; for example, attitudes not only affect behavior, but may also be affected by behavior. Besides, a unidirectional approach to a bi-directional reality may lead to incorrect estimations of regression coefficients.

PYGMALION LEADERSHIP IN ENDURING RELATIONSHIPS: ARE LEADERS' EXPECTATIONS FIXED OR CAN THEY BE CHANGED?

The Pygmalion effect is a self-fulfilling prophecy effect in which people's expectations of another person affect how they approach that person, making the expectations come true. Since Livingston (1969) proposed that leaders' expectations of employees subtly influence employees' development, motivation, and performance, several studies have been conducted to establish the strength of this influencing process. Meta-analytic studies have shown a fairly strong effect (Kierein & Gold, 2000; McNatt, 2000). It is believed that the practical relevance of this effect lies in the creation of a more productive and more developing workforce through raising leaders' expectations (Eden, 1990, 1992; Livingston, 1969). However, one may question whether it is realistic to expect that leaders' expectations can be manipulated when leaders are already acquainted with employees.

Questioning the practical relevance of the Pygmalion effect in organizations is justified for several reasons. Despite the many Pygmalion studies, it remains unclear whether leaders' expectations can be manipulated in enduring relationships; a successful manipulation of leaders' expectations in such a relationship still has to be reported. Most studies of the effects of leaders' expectations took place in training settings where leaders and employees met for the first time and the leaders were unaware of the employees' previous performance and capabilities (Eden, 1990). It might be argued that it is easier to manipulate leaders' expectations in settings where leaders do not yet have an impression of employees than in ongoing organizational settings where leaders already have well-established opinions of employees. Furthermore, Pygmalion experiments to enhance leaders' expectations of employees with whom the leaders were already acquainted have been unsuccessful (Eden et al., 2000; Sutton & Woodman, 1989) or the experimenters forgot to measure whether the manipulation of the leaders' expectations was successful

(Crawford, Thomas, & Fink, 1980; Eden et al., 2000; Sutton & Woodman, 1989). We should not exclude the possibility that leaders' low expectations of employees may well be correct. Analyses by Jussim and colleagues (Jussim, 1993; Smith et al., 1998; Trouilloud, Sarrrazin, Martinek, & Guillet, 2002) showed that teachers' expectations are often accurate and usually lead to relatively small biases and self-fulfilling prophecies. Some evidence exists that performance expectations are resistant to change. The accuracy of expectations limits the degree to which people are open to information that contradicts their perceptions, unless that information is perceived as even more reliable than their own (Brophy, 1983).

On the other hand, leaders form an opinion of employees already in the first few days of working together and this determines the quality of their relationship six months later, with consequences for employees' career and performance (Liden, Wayne, & Stilwell, 1993). Stereotyping must be part of perceptions that are formed so quickly, and stereotyping is not a reliable source for forming perceptions (Eden, 1990).

The present study was addressed to the fundamental question of the Pygmalion effect in organizations: Are leaders' expectations of employees fixed or can they be changed? In a quasi field-experiment, a group of leaders received training focused on enhancing their expectations of employees they had already been acquainted with for some time. Successfully raising these expectations would contribute to the practical relevance of the Pygmalion effect, and it may help to construe the first successful Pygmalion training program.

Pygmalion training design

Many Pygmalion experiments had the same design. Leaders' expectations were raised by having them believe that some people in a group were "high performers"; they formed the experimental group. No instruction was given about the other group members; they formed the control group (e.g., Davidson & Eden, 2000; Eden & Shani, 1982). Such a manipulation was only possible because the leaders did not know their subordinates beforehand. If the leaders and employees had known each other, the leaders would probably have questioned why a person was

designated a high performer if they had known that person as a low performer. They would probably have questioned the validity of the information. Thus, offering leaders information that contradicts their well-established perceptions has not been an option in manipulating leaders' expectations. So what can be done to reframe leaders' perceptions of employees into high expectations?

First, it may be possible to alter leaders' beliefs in the absolute rightness of their expectations by discussing the moderate strength of the correlations between leader ratings and self-ratings (*r is* .35 in Harris and Schaubroeck's (1988) meta-analysis). If data are available, it may be shown that moderate correlations between leaders' and employees' perceptions probably also apply to the leaders' organization and their own situation. Furthermore, it may be pointed out to leaders that correlations between leader ratings and objective performance criteria are also moderate (*r* is .39 in Bommer et al.'s (1995) meta-analysis, and *r* is .45 in Rich et al.'s (1999) meta-analysis). Finally, participants may be alerted to the consequences of their expectations for their approach to employees and, as a result, employees' behavior by discussing Pygmalion training experiments. Special attention should be paid to the negative consequences of low expectations (the Golem effect) for the employees, the department, and the organization (Babad, Inbar, & Rosenthal, 1982; Oz & Eden, 1994). One of the most important lessons from the Pygmalion experiments is that people have much more talent than leaders are aware of and that employees are able to prove their talents as soon as leaders facilitate them because of leaders' enhanced expectations. Livingston (1988) stated that leaders often hold employees back instead of letting them flourish, because leaders do not realize sufficiently what potential employees have.

Second, White & Locke (2000) suggested refocusing leaders' expectations from a performance orientation to a performance and a learning orientation. One of the ideas behind the Pygmalion effect is that leaders invest in those employees that probably are going to repay their investment. Adding a learning dimension to the evaluation of employees

enlarges the group that is worth investing in. High performers are by definition capable of learning, because how else could they have reached a high performance level; low performers are probably capable of improving, and if not, one may seriously question whether that person is in the right place. From this improvement perspective, the return on leaders' investment in under-performers may even exceed the return on investment in high performers. By emphasizing that employees may improve, leaders may revalue the lower performers more positively.

Third, employees' self-efficacy may be focused on as a key element in activating employees' high-performing behavior. Self-efficacy 'refers to beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments' (Bandura, 1997, 3). Self-efficacy influences people's choices of courses of action, the amount of effort they invest, their persistence, and their resilience to adversity. Research has shown that self-efficacy is positively related to work-related performance (Judge & Bono, 2001; Sadri & Robertson, 1993; Stajkovic & Luthans, 1998). Employees' self-efficacy may be enhanced. One of the most influential sources is mastery experiences (Bandura, 1997): building skills through practice; which fits the focus of leaders' expectations on learning. Research has shown that self-efficacy is a determinant of skill acquisition, retention of learning skills (Gist, Schwoerer, & Rosen 1989; Gist, Stevens, & Bavetta 1991), and employee development (Noe & Wilk, 1993; Maurer & Tarulli, 1994; Birdi et al., 1997; Maurer & Palmer, 1999; Maurer, Mitchell, & Barbeite, 2002; Maurer, Wrenn, Pierce, Tross, & Collins, 2003). This results in a self-reinforcing model of employees' performance improvement that may be presented and explained to leaders; see Figure 1.

Fourth, presenting leaders with tools to invest in the employees in accordance with the leaders' anticipated increased expectations may enhance the leaders' self-efficacy, which increases the possibility that the leaders will actually invest in the employees' development. Bezuijen, Thierry, van Dam, & van den Berg (2004b) showed that goal-setting and providing learning opportunities mediated the relationship between

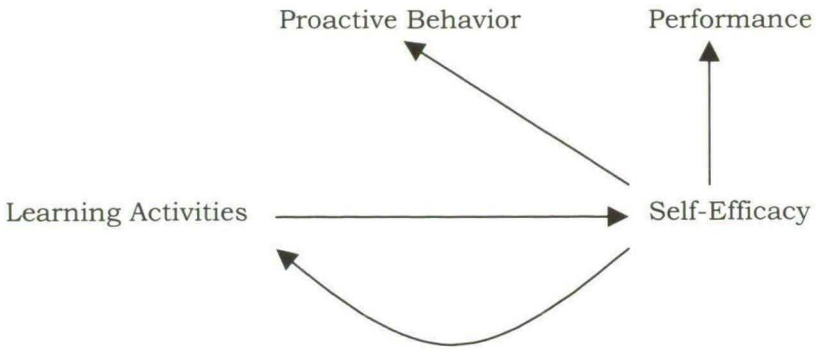


Figure 1: Learning activities and self-efficacy as keys for activating employees and improving performance.

leaders' expectations and engagement in learning activities. They found, just as for the general goal-setting effect (Locke & Latham, 1990), that when a leader and an employee set specific and difficult goals for the development of that employee, the employee more often engaged in learning activities. The same was true for providing learning opportunities: when leaders provided more opportunities, then employees more often engaged in development activities. Leaders can be trained in goal-setting according to the work of Locke and Latham (Locke & Latham, 1984; Locke & Latham, 1990). Special attention should be paid to how to reformulate difficult goals for complex tasks as simple, specific, challenging learning or mastery goals to make sure that goal-setting effects occur (Seijts, Latham, Tasa, & Latham, 2004). Furthermore, the importance of a high leader-member exchange (LMX) relationship, i.e., a relationship of trust, respect, and obligation between leader and employee (Graen & Uhl Bien, 1995) for leaders' guidance of employees' engagement in learning activities should be pointed out. A high LMX relationship is not only positively related to diverse positive work outcomes (Gerstner & Day, 1997), but it also positively moderates goal-setting and feedback effects (Bezuijen, Thierry, van Dam, & van den Berg, 2004a), making LMX an important condition for the success of goal-setting and initiating employees' mastery experiences.

These points constituted the basic framework of our experimental training condition. Through training leaders, we hoped that (1) leaders would expect more of their employees, (2) they would value employees' engagement in learning activities, (3) they would behave towards their employees as if they had high expectations by creating a high LMX relationship, setting specific and difficult learning goals, and providing them with learning opportunities, and (4) employees would engage more often in learning activities.

Method

Sample and design

An in-company training program was provided to a large social service organization in the Netherlands. This organization provides several services, including different levels of homecare, from household work to complicated nursing; child care; preventive and residential youth services; different forms of specialized social work: help for prostitutes, income control, help for HIV-infected people, and debt settlement projects. From across the organization, 22 leaders and 180 of their employees participated in the study. Leaders and employees had worked together at least five months and a maximum of 144 months, with an average of two years and three months. A total of twelve leaders completed the training. Their ages ranged from 31 to 50, with an average age of 41.3 years and a standard deviation of 5.9 years. Six of them were women. The comparison group consisted of 10 leaders: seven women and three men, ranging in age from 33 to 58 with an average age of 49.1 years and a standard deviation of 8.5 years. In total, 79 employees filled out a questionnaire twice: 120 employees before and 105 employees after the training. The individual employees formed the level of analysis. Fifty employees, the experimental group, had a leader who participated in the training, and 29 employees were part of the comparison group. Eighty-two percent of the employees were women. The average age of the employees was 40 years with a standard deviation of 10.5 years. The mean number of years of employees' education was 15.3 with a standard deviation of 2.4 years. A person starts

primary school at the age of four and 18 years later may have completed a course of studies at university.

The employees in the experimental and the comparison conditions did not differ concerning age and education, but the experimental group had slightly more women (88% compared to 72%). For neither the first nor the second measurement did chi-square tests for non-response bias indicate any differences between non-respondents and respondents concerning age, gender, and education.

Procedure

A few months before the training started, all leaders in the organization attended a presentation concerning the research: the training experiment, data collection, and the training procedure. Based on the presentation, the leaders decided that the organization would participate in the research. The participants in the training condition were not selected completely at random; they had to have at least seven subordinates. This was to guarantee anonymity to the employees, who provided the leaders with a form of 180-degree feedback as part of the training. Employees and leaders received a questionnaire six weeks before the training started. Employees answered questions concerning their leaders and their own behavior. Leaders answered questions concerning their perceptions of each employee individually. The training consisted of seven meetings of three hours each. The first four meetings were spread over a four-week period. After a one-month break, the training continued for three meetings, one every week. Each meeting had a different topic. The following topics were part of the training: the effect of leaders' expectations and the correctness of leaders' opinions of employees; the importance of employees' self-efficacy for their functioning in the organization; the possibility of stimulating employees' self-efficacy through mastery experiences; the importance of high LMX relationships; and how to set learning goals and provide learning opportunities. These topics stood central throughout the course and returned in different meetings. Through lectures, discussions, videos, self-tests, and games, the participants got acquainted with the different topics. Between the two training periods, a session was arranged with each

training participant individually. During that session, the training instructor provided the participants with a form of 180-degree feedback on their daily functioning. The answers provided by employees, at least six of them, at the first measurement were used as input for the feedback. To give the participants an opportunity to put the skills learned into practice, the second measurement occurred four months after the last meeting.

In the period between the first and second measurements, the organization was confronted with several influential external developments that affected people on the work floor. The organization was highly dependent on local and state subsidies, and, during the training period, these subsidies were lowered, resulting in reorganizations, rationalization of work processes, and job loss.

Measurement

Before and after the training, data were collected from employees and leaders. Employees answered questions about their LMX relationship, the specificity of the learning goals they had set with their leaders, the provision of learning opportunities, and their engagement in development activities. Leaders answered questions about each employee individually, concerning their expectations of that employee, the employee's performance, the desirability that the employee engage in development activities, the employee's engagement in development activities, and the difficulty of the learning goals the leader had set with the employee.

Leaders' expectations. As in other Pygmalion studies, leaders rated the potential of each of their employees in an assessment of the leaders' expectations of each employee (Davidson & Eden, 2000; Eden & Shani, 1982; Oz & Eden, 1994). The focus was on the employee's capacity to engage successfully in development activities. For four items, leaders indicated on a five-point Likert scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), whether they agreed that the employee would be successful. The scale's reliability coefficients were .84 for both measurements.

Desirability of learning activities. To measure whether leaders would positively value employees' engagement in learning activities, we asked the

leaders whether they thought it was desirable that employees participated in activities from which they might learn, such as learning activities in general, changing tasks, changing function, and following a course. The scale of four items, with categories ranging from 1 *(not at all desirable)* to 5 *(very desirable)*, had an internal reliability estimate of .77 and .78 for the first and second measurements, respectively.

Employees' performance. To obtain an indication of employees' performance, we asked leaders (5 items) to assess how well employees performed in several aspects of their work, such as general performance, extending knowledge and skills, taking initiative, supporting colleagues, and coming up with ideas for improvements. On a scale ranging from 1 *(mediocre)* to 5 *(very good)* leaders gave their opinions of employees. The internal reliability estimates for this scale were .88 for the first and .90 for the second measurement.

Leader-member exchange relationship (LMX). A translation of Graen and Uhl Bien's (1995) seven-item LMX scale was used to measure the leader-member exchange relationship. Employees' answers resulted in reliability estimates of .93 for both measurements.

Goal specificity. Based on pilot interviews, we developed six items to assess goal specificity. Employees indicated the specificity of the learning goals they had set with their leaders on a five-point Likert scale, ranging from 1 (*no goals*), to 2 *(vague goals)*, to 5 (*very specific goals*). The scale was normally distributed with a reliability estimate of .94 for both measurements.

Goal difficulty. On the basis of interviews, the six items referring to the same goals as did the goal-specificity items were used to assess the difficulty of the learning goals leaders and employees had set for the employee. We asked leaders about the goal difficulty, because self-perception measures of the difficulty of one' own goals confound to one's self-efficacy (Locke & Latham, 1990). Leaders indicated goal difficulty on a five-point Likert scale, ranging from 1 (*no goals*), to 2 *(very easy goals)*, to 5 (*very difficult goals*). The scale was normally distributed with reliability estimates of .85 for the first and .88 for the second measurement.

Providing learning opportunities. Four items were used, derived from the 'Basam questionnaire' (Biessen, 1992) and Maurer & Tarulli's (1996) scale of time, to assess the degree to which the leader provided employees with opportunities for participation in learning activities. The items were scaled from 1 (*strongly disagree*) to 5 (*strongly agree*). The reliability estimates were .82 for the first and .88 for the second measurement.

Employees' development behavior. To determine whether employees would more often engage in mastery experiences, we measured employees' development behavior by questioning leaders and employees. In our view, development behavior consists of engagement in activities that encourage learning and improve the employee's performance in his/ her current job as well as in future jobs. Sample items are 'I spend/ the employee spends time following a course or educational program' and 'I perform/ the employee performs learning tasks that are not part of my/ his/ her job'. Eight items were derived from previous studies (Birdi et al., 1997; Maurer, Mitchell, and Barbeite, 2002; Maurer & Tarulli, 1994; Maurer, Weiss, and Barbeite, 2003; Noe & Wilk, 1993). Employees and leaders indicated on a five-point scale, ranging from 1 (*never*) to 5 (*very often*), how often the employees participated in the activities described in the statement. The internal consistency reliability estimates were .82 and .81 for the first measurement of the employee and the leader scales, respectively, and they were .89 for the second measurement of both the employee and the leader scales.

Manipulation check

To ascertain whether the training participants had picked up the training content, they were asked to react to several statements before and after the training. All items ranged from 1 (*strongly disagree*) to 5 (*strongly agree*). The first check concerned the training participants' awareness of the role of their expectations in their approach to employees. The training participants reacted to five statements, e.g., 'Leaders' expectations play an important role in how they treat subordinates' and 'Employees' low performance is partly due to leaders' expectations'. A dependent sample *t*-test showed a significant effect (M = 2.72 at t1 and M = 3.02 at t2, t (11) =

3.00, $p < .05$). We also presented six items concerning the role of employees' self-efficacy for employees' functioning, e.g., 'Employees' self-efficacy is one of the best predictors of their functioning' and 'Employees high in self-efficacy are more eager to learn new things'. A dependent sample *t*-test resulted in another significant effect ($M = 3.17$ at t1 and $M = 3.65$ at t2, $t\,(11) = 2.97$, $p < .05$). The training participants also responded to some items concerning the importance of engagement in learning activities (three items), e.g., 'It is important for my department that employees learn new skills', and the availability of learning activities at work (two items), e.g., 'Sufficient learning activities are present in our department'. No significant changes occurred for these two scales (for importance of engagement in learning activities: $M = 3.92$ at t1 and $M = 3.95$ at t2; $t\,(11) = .25$, $p > .05$; for availability of learning activities: $M = 3.92$ at t1 and $M = 4.00$ at t2, $t\,(11) = .48$, $p > .05$). The initial high mean values of both scales may have made it more difficult to find an effect.

Results

The means and standard deviations are presented in Table 1. Independent t-tests showed that, at t1, the experimental group and the comparison group differed significantly on the variable performance ($t = 2.74$, $p < .01$). All other variables had non-significant different means at t1. A repeated measures design with measurements at t1 and t2 was used to test the effects of the training (Stevens, 1996). Training was the main independent variable. Gender, age, and education were added to the analysis as control variables. The results showed that gender, age, and education had non-significant effects.

We first tested the effect of training on leaders' expectations. Neither a main effect of time ($F\,(1,74) = .63$, $p > .05$) nor a main effect of the condition was present ($F\,(1,74) = .63$, $p > .05$), but we did find a significant interaction effect of time * training ($F\,(1, 74) = 6.52$, $p < .05$), suggesting that the training did make a difference. While in the comparison condition

Table 1

Means and Standard Deviations at t1 and at t2.

	Total				Experimental group				Comparison group			
	t1		t2		t1		t2		t1		t2	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Leaders' expectations	3.03	.79	3.04	.73	3.00	.76	3.16	.71	3.09	.84	2.85	.74
Performance	3.12	.94	3.06	.88	2.91	.87	2.95	.83	3.48	.94	3.26	.95
Desirability	3.33	.71	3.24	.63	3.30	.71	3.36	.53	3.39	.73	3.03	.74
Specific goals	2.61	1.20	2.49	1.16	2.66	1.20	2.49	1.17	2.53	1.21	2.47	1.17
Difficult goals	2.33	.76	2.46	.88	2.23	.75	2.56	.85	2.50	.76	2.28	.92
LMX	3.41	.93	3.38	.91	3.36	.94	3.31	.97	3.50	.94	3.51	.79
Providing learning opportunities	3.22	.87	3.13	.86	3.18	.81	3.10	.89	3.30	.97	3.19	.83
Employee development Leaders' perceptions	2.69	.80	2.69	.75	2.56	.72	2.74	.70	2.91	.88	2.61	.83
Employee development Employees' perceptions	2.91	.79	2.92	.69	2.80	.77	2.91	.70	3.09	.80	2.95	.69

the mean value of leaders' expectations decreased from M = 3.09 to M = 2.85 (t (28) = 1.64, p > .05), the mean value for the employees in the experimental condition increased from 3.00 to 3.16 (t (49) = 2.01, p < .05). Thus, the leaders' expectations of members of the experimental group increased significantly, whereas the general trend in the organization was equal or lower leaders' expectations. The analysis was rerun twice: once with the lower 50% of scores for leaders' expectations and once with the higher 50% of scores. In the comparison condition, the scores for the lower 50% increased from M = 2.42 to M = 2.55 (t (14) = .77, p > .05) and the higher 50% decreased from 3.80 to 3.18 (t (13) = 3.49, p < .01). In the training condition, notably, the scores for the lower 50% increased, from M = 2.36 to M = 2.68 (t (24) = 3.53, p < .01), while the scores for the higher 50% remained stable: M = 3.64 at t1 and M = 3.63 at t2. Thus, the manipulation of leaders' expectations was especially successful for the employees of whom leaders had low expectations.

For leaders' perceptions of employees' performance, neither a time effect (F (1,74) = 1.19, p > .05) nor a time * training effect was found F (1, 74) = 2.77, p > .05. Leaders in the experimental group and the comparison group did differ in the level of the ratings of employees (F (1,74) = 5.00, p < .05). Leaders in the comparison group rated their employees higher (M = 2.94 for the experimental group and M = 3.36 for the comparison group). This suggests that the training manipulated leaders' expectations but not leaders' perceptions of employees' performance.

To see whether the training succeeded in refocusing leaders' attention to a learning orientation, we tested the effect of training on leaders' perceptions of the desirability of employees' engagement in learning activities. Neither a main effect for time (F (1,74) = .35, p > .05) nor a main effect of the two conditions (F (1,74) = .88, p > .05) existed. We did find a significant interaction effect of time * training (F (1,74) = 6.81, p < .05): for the comparison group the mean value decreased from M = 3.39 to M = 3.03 (t (28) = 2.83, p < .01) and the mean values for the experimental condition were M = 3.30 at t1 and M = 3.36 at t2 (t (49) = .70, p > .05). For the 50% of employees of whom leaders had the lowest expectations, the perception

of desirability increased non-significantly from $M = 2.97$ to $M = 3.12$ (t (24) = 1.11, $p > .05$) for the employees in the experimental condition and decreased from $M = 3.13$ to $M = 2.80$ (t (14) = 2.01, $p < .10$) for the employees in the comparison condition. For the 50% of the employees of whom leaders had the highest expectations, the perception of desirability remained stable, $M = 3.63$ at t1 and $M = 3.60$ at t2 (t (24) = .24, $p > .05$), for the employees in the experimental condition and it decreased from $M = 3.67$ to $M = 3.29$ (t (13) = 1.93, $p < .10$) for the employees in the comparison condition. Thus, leaders who followed the training program did not change their perceptions of the desirability of employees' engagement in development activities, while other leaders in the organization lowered their perceptions.

Manipulating leaders' perceptions of employees was not the only aim of the training; it was also our objective to change leaders' behavior. In the organization concerned, it was not common explicitly to discuss goals for work or development, and often when goals were discussed, they remained vague and easy. The mean values for goal specificity and difficulty at t1 were $M = 2.61$ and $M = 2.33$. At t2, the goal specificity did not change significantly (F (1, 74) = .42, $p > .05$). In addition, neither a difference between the experimental and comparison groups (F (1, 74) = .40, $p > .05$) nor a time * training effect occurred (F (1, 74) = .42, $p > .05$). In the comparison condition, the values declined non-significantly from $M = 2.53$ to $M = 2.47$ and in the experimental condition the values declined non-significantly from $M = 2.66$ to $M = 2.50$. For goal difficulty, we found neither a main effect of time (F (1, 74) = 2.77, $p > .05$) nor a main effect of the two conditions (F (1, 74) = .00, $p > .05$), but we did find a training effect; the interaction of time * training was significant (F (1, 74) = 9.38, $p < .01$). The mean value increased from $M = 2.23$ to $M = 2.56$ (t (49) = 3.59, $p < .001$) in the experimental condition, while it declined non-significantly from $M = 2.50$ to $M = 2.28$ (t (28) = 1.33, $p > .05$) for the comparison group. Both LMX and providing learning activities remained stable across time. In the experimental condition, LMX had the values $M = 3.36$ at t1 and $M = 3.31$ at t2, and the scores for providing learning opportunities were $M =$

3.18 at t1 and M = 3.10 at t2. The values in the comparison condition for LMX were M = 3.50 at t1 and M = 3.51 at t2, and, for providing learning opportunities, M = 3.30 at t1 and M = 3.19 at t2. Neither variable had a training effect (F (1, 74) = .175, p > .05 for LMX and F (1, 74) = .00, p > .05 for providing learning opportunities).

Finally, we hoped that a shift in leaders' expectations in the direction of a learning orientation would eventually result in more employee development. Employees were more positive about their own engagement in development activities than were leaders: employees' perceptions were M = 2.91 at t1 and M = 2.92 at t2 and according to leaders the values for employee development were M = 2.69 at both times. For leaders' perceptions of employee development neither a time effect (F (1, 74) = .02, p > .05) nor a main effect of the condition (F (1, 74) = .65, p > .05) appeared. We did find an effect of time * training (F (1, 74) = 12.70, p < .001). For employees' perceptions, the training effect was not significant (F (1, 74) = 1.77, p > .05); neither was the main effect of time (F (1, 74) = .72, p > .05), and nor was the difference between conditions (F (1, 74) = .44, p > .05). Nevertheless, the same pattern emerged for both perceptions of employee development. The comparison group was less engaged in learning activities after the training than before: according to leaders' perceptions, M = 2.91 at t1 and M = 2.61 at t2 (t (28) = 2.65, p < .05), and according to employees' perceptions, M = 3.09 at t1 and M = 2.95 at t2 (t (28) = 1.47, p > .05). Engagement in learning activities increased in the experimental condition: according to leaders from 2.56 at t1 to 2.74 at t2 (t (49) = 2.93, p < .01) and according to employees from 2.80 to 2.91 (t (49) = 1.11, p > .05).

For many variables (leaders' expectations, desirability of employees' engagement in learning activities, goal specificity, goal difficulty, providing learning opportunities, and both leaders' and employees' perceptions of employee development), the scores in the comparison condition declined. Inquiry into and discussion of the results after completion of the study led us to believe that uncertainty about external influences, such as finances,

reorganization/ rationalization, and job loss, were responsible for these lower scores.

Discussion

The present study was focused on one of the most fundamental questions concerning the practical relevance of the Pygmalion effect in existing relationships between leaders and employees: Are leaders' expectations of employees fixed or can they be changed? The findings showed that, through training, leaders' expectations of employees they have been acquainted with for some time can indeed be changed in a more positive direction. This applied especially to employees of whom leaders had low expectations. At the same time, leaders' perceptions of employees' performance remained the same. The training also succeeded in causing leaders to maintain their positive attitudes toward the development of employees. Where in the rest of the organization leaders perceived employees' engagement in development activities as less desirable, the perceptions of the training participants remained the same. The effects of training on the variables used to measure leaders' behavior were mixed. After the training, leaders said they had set more difficult learning goals, but the employees' questionnaires suggested that the employees did not notice any difference concerning goal specificity, the provision of learning opportunities, and LMX. A difference in perceptions also applied to the evaluation of employees' engagement in development activities. According to leaders, the training affected employees' development behavior. According to employees, the same pattern emerged, but the training effect was not significant. This was possibly due to the small sample size.

The present findings have several theoretical implications. Notwithstanding that leaders' expectations may be accurate (Trouilloud et al., 2002) and resistant to change (Brophy, 1983), leaders' expectations of employees can be changed by causing leaders to refocus on different aspects of employees' functioning. In the present study, through training, we aimed to refocus leaders' attention on employees' capability to learn and improve. After the training, leaders did indeed more often think that employees were capable of learning, while the evaluation of employees'

performance remained unchanged. Changing leaders' evaluation of employees' performance probably takes more time, because employees first have to perform differently. Changes of leaders' expectations also occurred in the comparison condition; the expectations were lowered. Although it remains a matter of speculation why the expectations were lowered, we do know that the leaders were confronted with budget cuts, reorganizations, and personnel lay-off. This possibly caused leaders to be much more critical of employees, because they had to make up their minds who contributed the most to the organization and may, therefore, stay employed. This implies that leaders' expectations depend also on organizational circumstances.

The main practical implication of the present study is that leaders' expectations may indeed be instrumental in increasing the effectiveness of a workforce. Although it is difficult to say what element of the training was most effective in stimulating leaders' expectations, for the first time, leaders' expectations of employees in existing relationships were demonstrably manipulated. The present training program may be a good starting point to extend and perfect the Pygmalion training experiments. The training may be improved on several points. These points refer mainly to the content of leaders' behavior. First, only two sessions of three hours each were devoted to goal-setting and providing learning activities. Because these topics were mostly new to the participants, the training did not go much deeper than getting them acquainted with these topics. More time for these topics is preferable.

Second, goal-setting was not a practice in the organization and some participants felt awkward implementing goal-setting when this was not supported in advance by general management. The participants would probably have been even more open to the training content if the training had been part of a larger organization-wide program.

Third, the scores of goal difficulty increased as a result of training leaders, but they nevertheless remained low: $M = 2.56$ at t2 in the experimental condition. Such a value lies in between the anchors "easy goals" and "not very difficult goals". The participants stated that they

found it difficult to specify difficult goals, especially for highly routine work. In some departments, difficult tasks hardly existed, making it hard to find difficult learning tasks. Besides, strict bureaucratic procedures dictate which tasks have to be achieved, making it hard to specify goals that deviate from these procedures and to find the time to engage in non-procedural tasks. Future training programs may pay special attention to (1) activities in participants' departments that have learning potential and (2) concrete difficult learning goals leaders may set for their subordinates.

Fourth, in general, the quality of the LMX relationships was quite good from the start, making it difficult to gain higher LMX scores at t2. A better assessment of participants' training needs would contribute to the effectiveness of the training.

Fifth, finding changes in leaders' behavior by only manipulating leaders' expectations would require a tremendous number of participants, because the effects of the training on leaders' behavior through a rise in expectations would be very small. Let us suppose that the effects of training on leaders' expectations were as large as in the present study: r = .28. The effect of people's expectations on their behavior ranged from r = .13 to r = .20 in Harris & Rosenthal's (1985) meta-analysis and from r = .08 to r = .23 in the study by Bezuijen et al. (2004b). The expected indirect effect of training on leaders' behavior through manipulation of leaders' expectations would range from r = .02 to r = .06; a practically unrealizable number of participants is required to obtain enough power to find such indirect effects. Training leaders in a relevant mediating leadership behavior (e.g., goal-setting and providing learning opportunities) would probably completely overrule the effects of leaders' expectations. A leadership training program focused on motivating employees to manifest specific behaviors should pay attention to goal-setting, providing opportunities, and other techniques relevant for effectively influencing employees. The Pygmalion effect remains relevant for such training. Leaders' expectations moderate; high expectations ensure that leaders employ the techniques learned.

The present study has several limitations. Inherent in an organizational quasi field-experiment, it was not possible to assign participants randomly to the training condition or comparison condition, and it was impossible to control for various influences affecting both the experimental and comparison groups, such as budget cuts, reorganizations, and personnel lay-off. In addition, it was difficult to control for exchanges between the leaders in the experimental and comparison conditions. Training participants discussed the training content with leaders in the comparison condition, and at the end of the training, some participants proposed to the general management that some elements of the training be implemented, for example, goal-setting, throughout larger parts of the organization. Furthermore, the effect of training was mostly to be found in leaders' questionnaires. It can not be excluded that the training effects we found were spurious. For example, the training participants may have rated their employees higher because they supposed that higher ratings were expected of them. Finally, leaders stated that they expected more of employees because of the training, but we do not know exactly which part of the training or combination of parts was responsible for this effect.

In future studies, researchers may investigate what particular part of the training is most effective in changing leaders' expectations. Furthermore, future studies should be focused on training experiments for leaders that include effective leadership behaviors in combination with the Pygmalion effect to make sure that leaders employ these behaviors for all their employees.

THE GENERALIZATION OF THE PYGMALION EFFECT AND THE MODERATING EFFECTS OF SELF-EFFICACY, SATISFACTION, AND LMX

In the previous chapters, we discussed several issues concerning leaders' guidance of employee development. The question is in what degree the results can be generalized. Two perspectives may be taken in answering this question. First, can the findings of the studies reported in the preceding chapters be generalized to a wider range of organizations than the organizations that participated in these studies? This question is addressed in the final chapter. Second, do the findings concerning leaders' guidance of employee development apply only to employee development or do they also apply to other attitudes and behaviors of employees? We aimed to answer this second question in the present study.

We focused especially on four topics that shed light on the relationships between leadership characteristics and employee development. The first topic we handled was the range of the Pygmalion effect; are the effects of leaders' expectations limited to employee development or do leaders' expectations also affect other attitudes and behaviors of employees? The following two topics concerned whether all employees should be guided in the same way. We investigated whether employees' self-efficacy and job satisfaction moderated the relationships between setting specific and difficult goals and various employee behaviors, just as they moderated the relationship between leader support (in the form of feedback and providing learning opportunities) and employee development; see Chapter 3. The final topic dealt with whether the moderating effects of LMX on the relationship between setting goals and employee development can be generalized to other employee behaviors.

To test the universality of the Pygmalion effect and the moderating effects of self-efficacy, job satisfaction, and LMX, we conducted some additional analyses of several employee behaviors relevant to the functioning of organizations. The first behavior was altruism, which refers to voluntarily helping other employees with work-related problems (Organ,

1988; Organ & Ryan, 1995). The second was creative behavior: the production of novel solutions to relevant organizational problems (Mumford & Gustafson, 1988). The third behavior was employees' performance, measured through asking leaders for information, and, finally, we tested the Pygmalion effect for employees' job satisfaction.

The purpose of the present study was not to explain employees' satisfaction, altruistic behavior, creative behavior, and performance. The sole purpose was to test whether the findings reported in the previous chapters referred to more general phenomena or whether they applied only to employee development. We do not discuss below how and why several leadership characteristics relate to these newly tested employee attitudes and behaviors; instead, we refer to previous chapters.

Pygmalion beyond employee development

The Pygmalion model was helpful for understanding leaders' guidance of employee development. In the study reported in Chapter 1, we found that leaders' expectations were positively related to employee development and that this relationship was mediated by setting specific goals, setting difficult goals, and providing learning opportunities. This suggests that leaders made their expectations come true through setting goals and providing opportunities to obtain the goals.

Leaders' expectations have been shown to be related to several criteria such as number of infractions, multiple-choice exams, task performance, peer and supervisor appraisals, absences, turnover, and physical fitness (McNatt, 2000). Many researchers have found that setting specific and difficult goals leads to higher levels of motivation and performance for several kinds of behavior (Locke & Latham, 1990). In the present study, we tested whether leaders' expectations relate to employees' altruistic behavior, creative behavior, performance, and job satisfaction, and whether setting specific goals, setting difficult goals, and providing learning opportunities mediate these relationships.

Personal factors as moderating conditions for guiding employees' behavior

In the study presented in Chapter 3, we investigated several conditions that affect the relationship between leader support and employee development. We saw that both self-efficacy and job satisfaction moderated the relationship between leader support and employee development. We found that employees with low self-efficacy were most susceptible of support, and in some organizations this was also true for satisfied employees. Based on the plasticity theory, we argued that employees with low self-efficacy are more uncertain about the appropriateness of their own attitudes and behavior, which makes them rely more strongly on their (social) environment for directions (Brockner, 1988). Based on social exchange theory, we argued that high satisfaction discourages neglect and encourages loyalty toward the organization, which makes employees open minded to organizational support and, more particularly, leader support (Hagedoorn, Van Yperen, Van de Vliert, & Buunk, 2000; Rusbult, Farrell, Rogers, & Mainous, 1988).

Self-efficacy and job satisfaction may moderate the relationship between setting goals and employees' altruistic behavior, creative behavior, and performance, just as they moderated the relationship between leader support and employee development; see Chapter 3. High self-efficacy keeps employees committed to goals, especially when setbacks and failures occur (Bandura, 1997). Once goals have been set, high self-efficacy may encourage employees to focus on and to obtain the goals. This implies that the relationship between setting goals and employees' behavior is stronger for employees high in self-efficacy. Employees low in self-efficacy probably need more encouragement to keep their course of action in line with the goals. Based on social exchange theory, it seems reasonable to suggest that satisfied employees strive fully for the goals they have set with their leader, while dissatisfied employees tend to neglect and reject these goals.

To determine whether the moderating effects of self-efficacy and job satisfaction can be generalized beyond the relationship between setting specific and difficult goals and employee development, we used both self-

efficacy and job satisfaction as moderating variables for the relationships between setting specific and difficult goals and employees' altruistic behavior, creative behavior, and performance.

LMX as a moderating condition for guiding employees' behaviors

In the study reported in Chapter 4, we found support for LMX as a moderating condition that affects the relationship between setting difficult goals and employee development. The importance of LMX as a moderating condition increases significantly when it can be generalized to other employee behaviors. In the present study, we tested whether LMX moderates the relationships between setting specific and difficult goals and employees' altruistic behavior, creative behavior, and performance. Arguments for this LMX moderation are based on social exchange theory and are parallel to the arguments provided in Chapter 4.

Method

For the present analyses, data were used from 768 dyadic relationships in four organizations. The organizations have been presented in the previous chapters: a health care institution (N for individual level = 302, N for department level = 60), a penitentiary (N for individual level = 156, N for department level = 25), a social service organization (N for individual level = 102, N for department level = 22), and a high-tech company (N for individual level = 208, N for department level = 21). Leaders rated on average 6 employees.

On average, the employees were 41.44 years old with a standard deviation of SD = 9.5. Fifty-five percent were women, and the average number of years of education was M = 15.1 with a standard deviation of SD = 2.3 years. A person may start primary school at the age of four, and may have completed a course at university 18 years later.

Measures

The measures used to assess leaders' expectations and the leadership characteristics were the same as used in the study presented in Chapter 1: leaders' expectations (α = .85), LMX (α = .92), specific goals (α = .92),

difficult goals (α = .86), providing learning opportunities (α = .82), feedback (α = .86), and inspirational leadership (α = .92); see Chapter 1 for a full description. Parker's (1998) instrument of Role breadth self-efficacy was used to assess employees' self-efficacy (α = .91); see Chapter 3 and Chapter 5 for a full description.

The variables leaders' expectations, specific goals, difficult goals, providing learning opportunities, and feedback had a bias toward employee development and were less focused on the dependent variables of the present analyses. For example, the goal-setting scales consisted of one item referring to goals for the performance level in the current job, and five items referred to employee development. To make the analyses possible, we assumed that those somewhat specific leadership behaviors that were biased toward employee development reflected a more general pattern. For example, when leaders set specific goals for performance and development, they also set specific goals in general, and setting specific goals in general affects employees' altruistic behavior, creative behavior, performance, and job satisfaction.

Altruistic behavior. A self-report measure, validated by Podsakoff, MacKenzie, Moorman, and Fetter (1990), was used to assess altruistic behavior. Items referred to helping behavior such as 'Helping others who have been absent' and 'Helping orient new people even though it is not required'. Five-point Likert scales ranging from 1 (strongly disagree) to 5 (strongly agree) were used to assess altruistic behavior. The reliability estimate was α = .81.

Creative behavior. To measure creative behavior, a five-item scale was used based on the items used by George and Zhou (2001) and Scott and Bruce (1994). Sample items were 'coming up with new and practical ideas to improve performance' and 'promoting and championing ideas to others'. Respondents answered on five-point Likert scales ranging from 1 (strongly disagree) to 5 (strongly agree). The reliability estimate was α = .89.

Performance. Employees' job performance was assessed using leader ratings. Leaders were asked about employees' general performance levels, and performance in specific behaviors such as initiative behavior, altruistic

behavior, and creative behavior. For four items, leaders indicated their perceptions on five-point Likert scales ranging from 1 (*mediocre*) to 5 (*very good*). The reliability estimate was $\alpha = .89$.

Job satisfaction. A short-scale measure, adapted from Biessen's (1992) instrument, was used to assess employees' job satisfaction. For seven items, employees indicated on a five-point Likert scale, ranging from 1 (*very dissatisfied*) to 5 (*very satisfied*), how satisfied they were with various aspects of their work: job content, salary, direct leader, collegial relationships, development possibilities, working conditions, and exchanges of information. The reliability estimate was $\alpha = .76$.

Analyses

The procedure described by Baron and Kenny (1986) and Kenny, Kashy, and Bolger (1998) was used to asses whether the leadership characteristics mediated the relationships between leaders' expectations and the dependent variables: altruistic behavior, creative behavior, job performance, and job satisfaction. First, we tested whether there were relationships between leaders' expectations and the four dependent variables to be mediated. Second, we tested whether leaders' expectations were related to the leadership characteristics. Third, we tested whether the leadership characteristics were related to the dependent variables, while controlling for leaders' expectations. Fourth, we calculated the significance of the indirect effects, which are presented in Table 3.

The moderating effects were tested by constructing product terms of the interacting variables (Lubinski & Humphreys, 1990; Shepperd, 1991). To ensure that the significance of the product terms could be attributed to an interaction effect and not to a non-linear effect of one of the two interacting variables, all variables that formed a product term were tested for non-linearity. Non-linearity occurred for LMX in relation to altruistic behavior and creative behavior, but the non-linear effects of LMX did not affect the strengths of the effects of the product terms; thus, the non-linear effects of LMX were not included in the analysis.

Multilevel analyses, using 128 groups consisting of employees working under the same leader, were used to assess the effects of the leadership

characteristics, the moderating variables, and the interaction terms on the dependent variables. Only individual-level variables were analyzed to investigate the generalizability of the Pygmalion effect and the various moderating effects. Group-level effects and random variance components were not analyzed.

Results

The Pygmalion effect

The means, standard deviations, and correlations are presented in Table 1. First, leaders' expectations were positively related to altruistic behavior, creative behavior, performance, and job satisfaction. Thus, there were relationships between leaders' expectations and employees' behavior and job satisfaction to be mediated. Second, leaders' expectations were also positively related to all leadership characteristics. Third, Table 2 represents the significant relationships between the leadership variables and the dependent variables controlled for leaders' expectations. As can be seen, LMX was positively related to all four dependent variables. Setting specific goals was positively related to altruistic behavior and creative behavior. Setting difficult goals was positively related to altruistic behavior, creative behavior, and performance, and it was negatively related to job satisfaction. Providing learning opportunities was not related to any dependent variable. Feedback was negatively related to creative behavior and performance, and inspirational leadership was positively related to job satisfaction. Fourth, Table 3 represents the strength and the significance of the indirect relationships of leaders' expectations with the dependent variables through the leadership characteristics. The most significant mediator was LMX; it positively mediated the relationships of leaders' expectations with all four dependent variables. Setting goals was also a strong mediator; it mediated the relationships of leaders' expectations with altruistic behavior, creative behavior, performance, and job satisfaction. Feedback mediated negatively the relationships of leaders' expectations with creative behavior and performance, and inspirational

Table 1

Means, Standard Deviations, and Correlations (N = 768).

	M	SD	1	2	3	4	5	6	7	8	9	10
1. Altruistic behavior	2.88	.69										
2. Creative behavior	2.62	.75	.60									
3. Performance	3.26	.93	.23	.28								
4. Satisfaction	3.48	.57	.07	-.01	.17							
5. LMX	3.37	.78	.25	.14	.27	.51						
6. Specific goals	2.83	1.03	.19	.16	.13	.37	.47					
7. Difficult goals	2.58	.81	.09	.17	.42	-.01	.09	.17				
8. Learning opportunities	3.28	.77	.13	.09	.20	.54	.44	.47	.15			
9. Feedback	3.09	.87	.14	-.02	.05	.42	.56	.55	.08	.43		
10. Inspirational leadership	3.20	.73	.17	.08	.17	.55	.67	.47	.09	.50	.61	
11. Leaders' expectations	3.64	.80	.17	.17	.64	.12	.20	.15	.36	.15	.07	.15

For correlations greater than or equal to .07, $p \leq .05$. For correlations greater than or equal to .09, $p \leq .01$.

Table 2

Results of the Multilevel Analyses (N = 768).

	Altruistic behavior β	Creative behavior β	Performance β	Satisfaction β
Step 1				
Leaders' expectations	.16 ***	.17 ***	.64 ***	.10 ***
Step 2				
Expectations	.08 *	.08 *	.53 ***	.02
LMX	.19 ***	.16 ***	.20 ***	.19 ***
Goal specificity	.07 *	.17 ***	-.05	.02
Goal difficulty	.07 *	.11 **	.21 ***	-.11 ***
Providing learning opportunities	.01	.00	.07 *	.31 ***
Feedback	-.05	-.21 ***	-.11 ***	.04
Inspirational leadership	.03	.01	.00	.24 ***

* $p \leq .05$, ** $p \leq .01$, and *** $p \leq .001$.

Table 3

Indirect Relationships between Leaders' Expectations and Dependent Variables through Leadership Characteristics (N = 768).

	Altruistic behavior		Creative behavior		Performance		Satisfaction	
	β	Z	β	Z	β	Z	β	Z
LMX	.04	3.20 ***	.03	2.73 **	.04	3.87 ***	.04	3.26 ***
Goal specificity	.01	1.70 *	.03	2.51 **	.00	-	.00	-
Goal difficulty	.03	1.83 *	.04	2.76 **	.07	5.06 ***	-.04	3.30 ***
Providing learning opportunities	.00	-	.00	-	.01	-	.01	-
Feedback	.00	-	-.01	1.79 *	-.01	1.66 *	.00	-
Inspirational leadership	.00	-	.00	-	.00	-	.04	2.95 **

behavior mediated only the relationship between leaders' expectations and job satisfaction. Although all the relationships between leaders' expectations and the four dependent variables were mediated by leadership characteristics, the mediation was only complete for job satisfaction.

Personal factors as moderating conditions

As can be seen in Table 4, employees' self-efficacy had a strong positive relationship with altruistic behavior and creative behavior. The relationship between self-efficacy and performance was less strong, but significant. Self-efficacy did not moderate the relationship between difficult goals and the three dependent variables, but it did moderate the relationships between specific goals and all three dependent variables. For the highest levels of self-efficacy, the relationships of specific goals with altruistic behavior, creative behavior, and performance were moderately strong and for the lowest levels of self-efficacy the strength of these relationship was in the neighborhood of zero.

Table 4

The moderating effects of employees' self-efficacy (N = 768).

	Altruistic behavior β	Creative behavior β	Performance β
Gender	-.09 *	-.08 *	.01
Age	.02	.02	.01
Education	-.01	.09 **	.06 *
Goal specificity	.13 ***	.09 **	.06 *
Goal difficulty	.07 *	.09 **	.40 ***
Self-efficacy	.37 ***	.46 ***	.09 **
Self-efficacy * goal specificity	.09 **	.07 *	.06 *
Self-efficacy * goal difficulty	-.04	-.03	.00

* $p \leq .05$, ** $p \leq .01$, and *** $p \leq .001$.

Employees' job satisfaction also had significant moderating effects; see Table 5. It did not moderate the relationships between specific goals and the dependent variables, but it did moderate the relationship of difficult goals with the dependent variables. For the highest levels of job satisfaction, the relationships of setting difficult goals with altruistic behavior and creative behavior were moderately strong and the relationship with performance was strong. For employees with low levels of job satisfaction, the relationships of difficult goals with altruistic and creative behavior were almost zero, and the relationship with performance was lower, but still moderately strong.

Table 5

The Moderating Effects of Job Satisfaction (N = 768).

	Altruistic behavior β	Creative behavior β	Performance β
Gender	-.17 ***	-.18 ***	-.02
Age	-.01	.00	.00
Education	.08 *	.22 ***	.08 **
Goal specificity	.13 ***	.14 ***	.00
Goal difficulty	.10 **	.11 **	.41 ***
Job satisfaction	.04	-.05	.15 ***
Job satisfaction * goal specificity	.03	-.01	-.05
Job satisfaction * goal difficulty	.06 *	.06 *	.09 **

* $p \leq .05$, ** $p \leq .01$, and *** $p \leq .001$.

LMX as a moderating condition

Table 6 shows that LMX moderated the relationships between setting specific goals and altruistic behavior, setting specific goals and creative behavior, and setting difficult goals and performance. Leaving the interaction effect of LMX and setting specific goals out of the analyses

resulted in positive moderating effects of LMX on the relationships between setting difficult goals and both altruistic and creative behavior.

Table 6

The moderating effects of LMX (N = 768).

	Altruistic behavior β	Creative behavior β	Performance β
Gender	-.17 ***	-.19 ***	-.01
Age	-.01	-.01	.00
Education	.07 *	.21 ***	.08 **
Goal specificity	.05	.07 *	-.05
Goal difficulty	.09 **	.12 ***	.40 ***
LMX	.22 ***	.12 ***	.25 ***
LMX * goal specificity	.15 ***	.12 ***	.01
LMX * goal difficulty	.03	.03	.06 *

* $p \leq .05$, ** $p \leq .01$, and *** $p \leq .001$.

Discussion

The results of the present analyses showed that some of the major findings of the studies presented in the previous chapters are more widely applicable than merely to employees' development behavior. First, the Pygmalion effect appears to extend beyond employees' development behavior to employees' altruistic behavior, creative behavior, performance, and job satisfaction. As for employee development, the goal-setting variables were among the most important mediating variables, feedback tended to mediate negatively the relationship between leaders' expectations and employees' behavior, and inspirational leadership was not directly related to employees' behavior, but it was positively related to job satisfaction. Second, the findings that employees' self-efficacy and job satisfaction moderated the relationship between leader support (in the form of feedback and providing learning opportunities) and employee

development applied also to the relationships between setting goals and altruistic behavior, creative behavior, and performance. Third, just as LMX moderated the relationship between setting goals and employee development, LMX also moderated the relationships of setting goals with altruistic behavior, creative behavior, and performance.

Although the results of the present analyses were, in general, in line with the results of the studies reported in the previous chapters, some differences occurred as well. Concerning the Pygmalion effect, LMX obtained a somewhat more prominent place, and providing learning opportunities was not a mediating variable. These differences may be due to the fact that most of the leadership characteristics were focused on employee development. An operationalization of leaders' expectations, setting specific goals, setting difficult goals, providing learning opportunities, and feedback more in line with the dependent variables altruistic behavior, creative behavior, and performance may augment the strength of the relationships between leaders' expectations and these leadership characteristics and between these leadership characteristics and the dependent variables. Multi-source measures may be used to prevent spurious relationships caused by respondents inability to discriminate between variables when independent variables are tailored to explain dependent variables.

Although the correlations between leaders' expectations and employees' behavior and attitudes were not very strong in the present analyses, the importance of the Pygmalion effect in organizations was greater than its significance for employee development. The results suggest that the effects of leaders' expectations on employees' behavior are not limited to one specific behavior, but spread unchecked through leadership characteristics to all attitudes and behaviors of employees. The suggestion that leaders' expectations also affect employees' attitudes such as job satisfaction gives the Pygmalion effect greater significance, because of the various possible consequences of job satisfaction on employees' behaviors (e.g., turnover (Griffeth, Hom, & Gaertner, 2000); organizational citizenship behavior (Organ & Ryan, 1995); exit, voice, loyalty, and neglect (Farrell,

1983; Rusbult et al., 1988)). The Pygmalion effect is shown to be even more important by the finding of positive relationships between leaders' expectations and conditional variables such as LMX and employees' job satisfaction. The results suggest that high leaders' expectations positively affect these conditional variables, which positively affects the effectiveness of setting goals, one of leaders' most effective instruments to guide employees' (development) behavior.

DISCUSSION

In the studies reported in the previous chapters, a number of topics concerning leaders' guidance of employee development were investigated. The goal was to gain insight into how leaders may effectively guide employees' development behavior. Several questions guided the studies:

1. Which employees engage in development activities?
2. Do leaders' expectations relate to employees' development behavior?
3. What leadership characteristics relate to leaders' expectations?
4. How do these leadership characteristics relate to employee development?
5. What conditions affect the relationship between leadership characteristics and employee development?
6. How stable are leaders' expectations of employees; can these expectations be changed?

In this final chapter, we summarize and discuss the findings concerning these questions and we discuss the generalization of the results.

In the introduction, we discussed the Pygmalion model at work; this described how high leaders' expectations transform employees into developing employees. Based on the findings of the studies presented in the previous chapters, we believe that the Pygmalion model should be modified as presented in Figure 1.

Figure 1 shows that:

1. Leaders' expectations are positively related to all the leadership characteristics that leaders use to make their expectations come true.
2. Setting goals and the provision of learning opportunities are directly related to employee development.
3. The relationship between LMX and employee development is mediated by setting goals and the provision of learning opportunities.

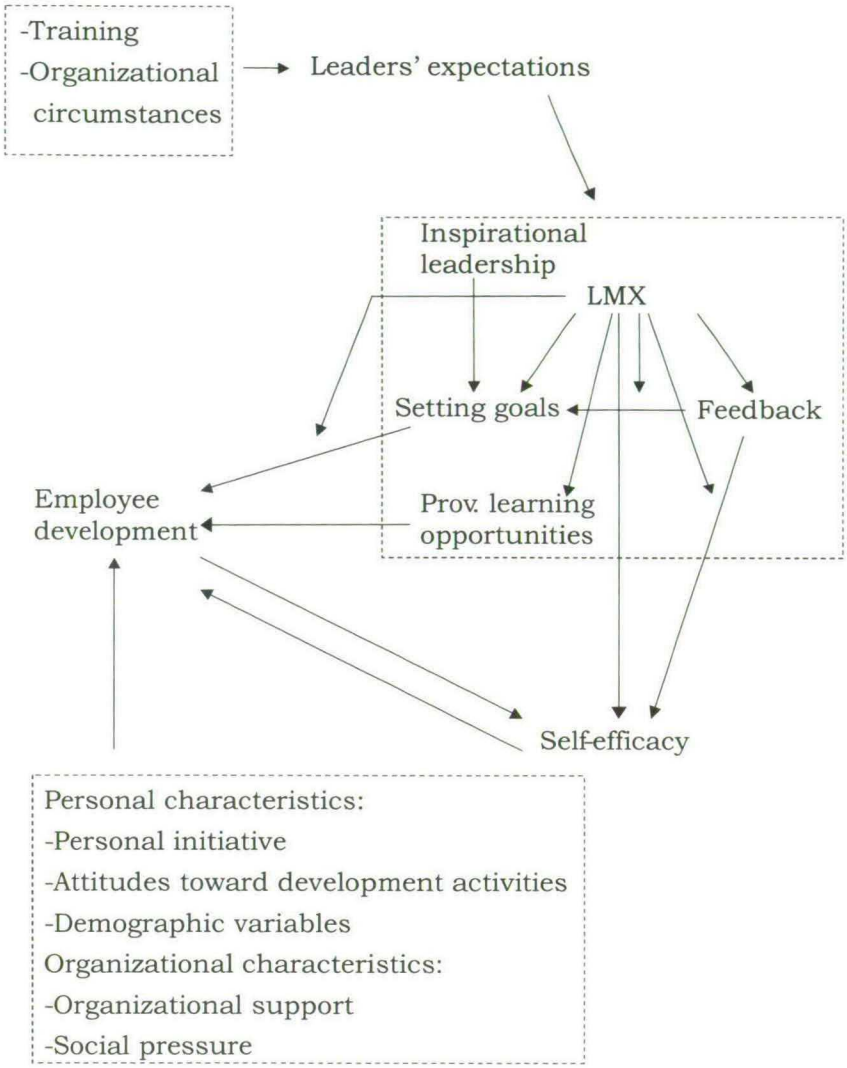


Figure 1: Interpretation of the results.

4. The relationship between feedback and employee development is mediated by setting goals.
5. LMX is positively related to employees' self-efficacy.
6. Feedback is negatively related employees' self-efficacy.

7. LMX moderates the relationships between feedback and setting goals, setting goals and employee development, and feedback and self-efficacy.
8. Higher self-efficacy results in more employee development, and more employee development results in higher self-efficacy.
9. Personal characteristics such as personal initiative, positive attitudes toward development activities, and demographic variables (gender, age, and education), and organizational characteristics such as organizational support and social pressure determine employee development.
10. The training of leaders and organizational circumstances may affect leaders' expectations.

In the model of Figure 1, setting specific goals and setting difficult goals were combined into one variable, goal-setting, and some findings were left out, for example, the moderating effects of job satisfaction, self-efficacy, and the complexity of work. By answering and discussing the questions that were formulated in the introduction, we pursued our findings in greater depth.

Which employees engage in development activities?

In the study reported in Chapter 2, we found support for our initial idea that employees who have an active and self-starting approach to work reach higher levels of development. Personal characteristics such as personal initiative, self-efficacy, and positive attitudes toward development were positively related to employee development. Developing employees were also younger and higher educated, and slightly more men than women were engaged in development activities; see Chapter 3, Chapter 4, and Chapter 5.

The results suggested also that environmental circumstances affect whether employees engage in development activities. Organizational support was positively related to employees' attitudes toward development activities and employees' development behavior (see Chapter 3); employees who felt social pressure engaged more often in development activities (see Chapter 2); and we found various leadership characteristics to be

positively related to employee development (see Chapter 1, Chapter 4, and Chapter 5).

Do leaders' expectations relate to employees' development behavior?

It appeared that Livingston (1969) was right when he stated that leaders' expectations are the lever of employees' performance and development. Just as leaders' expectations relate to employees' performance (Kierein & Gold, 2000; McNatt, 2000), they also relate to employees' development behavior. This finding contributes to the relevance of the Pygmalion effect in organizations, especially because our findings are based on a relatively large sample compared to previous studies (Kierein & Gold, 2000; McNatt, 2000).

Owing to different measurement sources of employee development (leaders and employees), the strength of the relationship between leaders' expectations and employee development differed; see Chapter 1. For employees' perceptions, the relationship between leaders' expectations and employee development (r = .22) did not differ significantly (Fisher's z = .83, p > .05 and Fisher's z = .28, p > .05) from the relationship between leaders' expectations and employees' performance in civil organizations found in two meta-analytic studies: r = .25 in the study by Kierein and Gold (2000) and r = .23 in the study by McNatt (2000). For leaders' perceptions, the relationship between leaders' expectations and employee development was stronger (r = .65) than the relationships found in these two meta-analytic studies, but, in the meta-analytic studies, performance measures were mostly not assessed using leaders' perceptions. Tierney and Farmer (2004) did use leaders' ratings to assess employees' behaviors. The relationship between leaders' expectations and employees' creative behavior (r = .57) found in Tierney and Farmer's study did not differ significantly (Fisher's z = 1.39, p > .05) from the relationship between leaders' expectations and leaders' perceptions of employee development found in the study presented in Chapter 1 or from the relationship between leaders' expectations and performance (r = .64, Fisher's z = 1.19, p > .05) found in the study presented in Chapter 7.

The finding that leaders' expectations correlate highly with leaders' perceptions of employees, whether this concerned development behavior in the study reported in Chapter 1, performance in the study presented in Chapter 7, or creative behavior in Tierney and Farmer's study, does not come as a surprise. Eden (1990) already mentioned that leaders form their expectations on the basis of experiences in working with an employee, evaluations from other sources, and various stereotypes. However, the fact that leader ratings are quite different from objective performance criteria (Bommer et al., 1995; Heneman, 1986; Rich et al., 1999) suggests that leaders' approach of employees based on leaders' expectations that are formed on the basis of leaders' experiences of working with employees still holds back many capable employees of whom leaders have low expectations. These employees do not develop as much as they would have developed if leaders' expectations were high.

Leaders may justify their investments in employees in accordance with their expectations by pointing out that they have limited time and resources, which can not be provided to every employee in the same degree. What leaders then actually do is guide the employees they perceive as having high potential and pay less attention to those perceived as having low potential, increasing the gap between the two groups of employees. This is the same as starting a selection process and dividing employees in an in-group and an out-group, as described in LMX theory; see Chapter 1 and Chapter 4. We do not believe that selection processes that are initiated by leaders and that are solely based on leaders' expectations are desirable for an organization. First, leaders' perceptions of employees are by no means faultless, implying that the wrong employees are frequently selected. Second, leaders appraise and approach their employees partly to meet their own needs (Longenecker, Gioia, & Sims, 1987), which do not have to be the same as the needs of the organization or the employees. Third, leaders are often not aware of the consequences of their expectations, implying that the selection is not an intended and controlled process. Fourth, in the case of low expectations, certainly when employees perceive these expectations to be wrong, employees may feel

mistreated, which may negatively affect employees' fairness and justice perceptions with negative consequences for employees' work-related attitudes and behaviors (Cohen, Charash, & Spector, 2001; Colquitt, Conlon, Wesson, Porter, & Ng, 2001). Fifth, it seems plausible to argue that the creation of in-groups and out-groups lowers the competition between employees and competition as a push factor that may stimulate employee development, because the out-group employees less likely qualify for promotions and rewards and, therefore, less likely compete for promotions and rewards.

The question is how leaders can neutralize low expectations and approach every employee as if their expectations are high, even when leaders have limited time and resources. We provided answers in Chapter 1, Chapter 4, and Chapter 6. In summary, leaders may set specific and difficult goals for all employees, provide them with learning opportunities, and inform employees of their expectations, so employees can take measures when they feel that the leader's expectations differ from their own and injustice is at hand. In addition, leaders may enhance the quality of the LMX relationship by showing interest in employees, expressing personal information, and putting effort into relationship development, with as a consequence that the goal-setting effects increase.

What leadership characteristics relate to leaders' expectations?

The Pygmalion theory states that leaders approach employees in such a way that they make their expectations come true. The study presented in Chapter 1 was the first in which it was investigated what exactly leaders do differently when they have high expectations in contrast to low expectations. We found that all leadership characteristics were positively related to leaders' expectations. When leaders had high expectations, the LMX relationship was higher, more specific and more difficult goals were set, employees received more learning opportunities and more feedback, and leaders were more inspirational. It seems that leaders do all they can to fulfill their expectations.

The leadership characteristics used in the present studies were selected from Rosenthal's (1973) four-factor model, which was based on analyses of

the relationships between teachers' expectations and teachers' behaviors. These four factors and four of the leadership characteristics selected in the present studies were similar. The correlations between teachers' expectations and each of the four factors did not differ significantly from the correlations between leaders' expectations and four of the leadership characteristics that were derived from the four-factor model; see Chapter 1. This leads us to speculate that our findings concerning interpersonal relationships in organizations may also apply to contexts other than leader-employee relationships in organizational settings, such as teacher-student, therapist-client, trainer-athlete, consultant-manager, and parent-child relationships.

The leadership characteristics investigated in the present studies explained the relationship between leaders' expectations and employee development for a large part, but these characteristics did not mediate the relationship completely. It might be true, as suggested by several authors (e.g., Eden, 1990; King, 1971), that leaders' non-verbal cues (not measured in the present studies) mediate the remaining unexplained relationship between leaders' expectations and employee development. Some other leadership behavior may also play a role. The not-mediated relationship between leaders' expectations and employee development may also reflect reversed causality: leaders had high expectations of developing employees.

How do these leadership characteristics relate to employee development?

We found that all leadership characteristics were positively related to employee development. However, only setting specific goals, setting difficult goals, and providing learning opportunities were directly related to employee development. LMX, feedback, and inspirational leadership were not directly related to employee development. This caused us to consider the question why one leadership characteristic had a direct relationship with employee development and the other not.

An initial idea might be that the significant correlations between the leadership characteristics that were not directly related to employee development and employee development were spurious. The correlations

between the leadership characteristics reflected common source bias and the correlations with employee development reflected the common source bias with the variables setting specific goals, setting difficult goals, and providing learning opportunities, which were directly related to employee development. This would reduce LMX, feedback, and inspirational leadership to non-relevant variables for employee development. This explanation contradicts the findings of many studies in which LMX, feedback, and inspirational leadership were found to be important leadership characteristics for employee development. The lower but significant correlations between the variable setting difficult goals and the other leadership variables indicated that there was more involved than common source bias; the correlations between the leadership characteristics probably reflected true relationships. We think that goal-setting and providing learning opportunities mediated the relationships of LMX, feedback, and inspirational leadership with employee development.

How could we explain these mediation phenomena? Fortunately, some theories gave us direction in interpreting our results. The distinction between distal (e.g., values) and proximal (e.g., goals) causes of human behavior and the fact that distal causes influence behavior through proximal causes may be helpful in understanding our findings (Locke & Henne, 1986; Kanfer, 1992; Locke, 1991, 2001). Leaders who set specific and difficult goals with employees act at the most immediate motivational determinant level, which has direct consequences for employees' behavior. LMX, feedback, and inspirational leadership probably affect a more distal level, such as that of values, affective states, and attitudes.

The mediation of the relationship between LMX and employee development may be explained by the role-making model (Graen & Cashman, 1975; Graen & Scandura, 1987), which states that leaders try out employees by providing them with opportunities to work on unstructured tasks. Unstructured tasks often contain learning elements and involve development, and as a result of the assigning of such tasks an implicit form of goal-setting occurs. Leaders' evaluations of employees' performance in these tasks determine whether leaders create high LMX

relationships. Employees in high LMX relationships are leaders' most preferred workers and obtain many possibilities to work on unstructured tasks, thus, implicitly, goals are set and learning opportunities are provided.

Based on, among other things, the work of Locke and Latham (1990), we argued that people who receive feedback that informs them that their current state does not correspond to their desired state adjust their goals to reach the desired state. We found support for this argument in Chapter 4; setting specific goals and setting difficult goals completely mediated the relationship between feedback and employee development.

Kirkpatrick, Locke, and Latham (1996) argued that inspirational leaders articulate a vision by which they set superordinate goals for everyone in the organization. These superordinate goals result in behavior through specific and difficult (self-set) goals.

Finally, mediation was also found to apply to how the leadership characteristics affected employee development. According to the Pygmalion model, leaders affect employees' behavior through employees' self-expectations/ self-efficacy. As expected, we found that self-efficacy mediated the relationships of LMX and feedback with employee development, but it did not mediate the relationships of setting specific goals, setting difficult goals, and inspirational leadership with employee development; see Chapter 5. The relationships of setting specific goals and setting difficult goals with employee development were direct.

What conditions affect the relationship between leadership characteristics and employee development?

The present studies were unique in that we assessed several conditions that affected the relationships between leadership characteristics and employee development that had not been assessed before. First, the relationship between providing learning opportunities and employee development is much stronger for employees who do complex work than for employees whose work is less complex; see Chapter 3. Second, in accordance with plasticity theory, we found that employees with low self-efficacy were most susceptible of support; see Chapter 3. Third, job

satisfaction moderated the relationship between the provision of learning opportunities and employee development in a complex way; in most organizations satisfaction moderated this relationship negatively (dissatisfied employees used the opportunity to leave the organization) and in some organizations the effect of moderation was positive (based on social exchange theory, satisfied employees were open to support and dissatisfied employees showed no interest in support); see Chapter 3. Fourth, based on social exchange theory, we found support for moderating effects of LMX on the relationships between feedback and setting difficult goals, feedback and employee development, and setting difficult goals and employee development; see Chapter 4 .

In the study presented in Chapter 4, we found that the relationship of feedback with employee development was completely mediated by setting specific and difficult goals. The relationship of feedback with employee development became negative when it was controlled for LMX. The moderating effects of LMX on the relationship between feedback and employee development suggested that feedback effects can not be considered without taking LMX relationships into account. Only in high LMX relationships are the relationships between feedback and employee development and between feedback and employees' self-efficacy (based on additional analysis) not negative. This indicates that high LMX relationships are essential for effective leader guidance of employee development.

In the study reported in Chapter 7, we conducted some additional analyses, and the results of these analyses suggested that the moderating effects of self-efficacy, job satisfaction, and LMX have wider applicability than merely to guiding employees' development behavior. It seems that, in general, employees low in self-efficacy are more susceptible of support and need more guidance to attain goals than employees with high self-efficacy. Also, dissatisfied employees and employees in low LMX relationships (often the same employees), in contrast to satisfied employees and employees in high LMX relationships, take less notice of leaders' guidance, or do so in a negative way. Dissatisfied employees used the support to leave the

organization, and the relationship between feedback and employees' self-efficacy was negative in low LMX relationships whereas it was zero in high LMX relationships.

How stable are leaders' expectations of employees; can these expectations be changed?

The results of the study described in Chapter 6 showed that leaders' expectations of employees with whom they have been working for a while are not stable constructs, implying that it must be possible to develop practical ways to cause managers to expect more. In our attempt to raise leaders' expectations by providing them with training, we found that the leaders' expectations were raised significantly. From a skeptical point of view, one might argue that we did not actually raise leaders' expectations, but that leaders stated that their expectations were higher because they thought that this was expected of them. However, that leaders' expectations are not stable constructs was shown even more clearly by the decrease in leaders' expectations among the leaders in the comparison group, probably owing to changing organizational circumstances. This made us believe that leaders' expectations may fluctuate as a result of organizational circumstances or training focused on upping leaders' expectations, implying that leaders may learn to see employees' potential rather then merely their limitations.

Generalization of the findings

The collected data originated from a diverse range of Dutch organizations that included production companies and service providers in the profit and non-profit sectors, some of which had simple and some of which had complex work processes. The organizations showed differences with respect to young and old, men and women, lower- and higher-educated employees, and clerical and blue-collar workers. The employees and leaders who participated in the studies worked on an operational level.

The results of the many multi-group analyses reported in the previous chapters showed that the mean values varied across organizations, divisions, and departments, but, in general, the strengths of relationships

between the variables in the various studies were stable across the organizations, divisions, and departments. The results of the study presented in the first chapter showed that the Pygmalion effect held in all participating organizations, and that in all organizations the relationship between leaders' expectations and employee development was mediated by the same leadership characteristics. In the study presented in the second chapter, no significant differences between the participating organizations were observed concerning any of the relationships between personal determinants and employee development. In the study described in the third chapter, the relationships between support and employee development were invariant across organizations, with the exception of the relationships between providing learning opportunities and employee development and between self-efficacy and employee development. These relationships were positive in all subunits, but varied in strength. Part of this variation was explained by the complexity of work processes in the organizations. In the study reported in the fourth chapter, LMX moderated the relationships between setting goals and employee development and between feedback and employee development in all participating organizations, divisions, and departments in the same way. Finally, in the study presented in the fifth chapter, we saw that the relationships between the leadership characteristics, self-efficacy, and employee development did not differ across the participating organizations, with one minor exception: in one organization, the relationship between LMX and self-efficacy was stronger than in the others. The fact that our findings were generally stable across organizations, and that these organizations were so different in character, strengthens our belief that our findings reflect general phenomena that probably apply to many other civil organizations.

The additional analyses presented in Chapter 7 suggested that some of our major findings concerning the Pygmalion effect and the moderating effects of self-efficacy, job satisfaction, and LMX extend beyond employees' development behavior to other employee behaviors and attitudes such as altruistic behavior, creative behavior, performance, and job satisfaction (the latter was only tested in relation to the Pygmalion effect). We believe

that our major findings regarding employee development reflect leader–employee interaction patterns that apply to various employee behaviors, and this interaction probably does not depend on the type of civil organization.

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SUMMARY

In today's world of globalization, technological advancement and other changes in organizations' environment, employee development may help organizations to anticipate and adapt to these changes. Employee development refers to an employee's active engagement in many forms of on- or off-the-job learning and training that takes a longer-term perspective than typical training provisions, and that extends into career planning and reviews of personal progress. Examples of development activities are following a training or course, performing learning tasks that are not part of the daily routine, planning and achieving a career, and trying to improve work quality. Leaders are expected to be able to stimulate employee development. However, most researchers have focused mainly on general measures of leader support, obscuring what exactly leaders should do to guide employee development effectively. The goal of the present thesis was to gain insight into how leaders may guide employee development effectively.

Our approach to leader guidance of employee development was inspired by the Pygmalion theory. This theory postulates that leaders' expectations of employees are the lever of employee performance and development. High expectations initiate a self-fulfilling prophecy effect: leaders act such that high expectations are met. The theory states that leaders influence employees' behavior both directly and indirectly. In the case of high expectations, the direct influence refers to a better facilitation of employees' work and development resulting in higher achievement and enhanced employee development. Indirectly, leaders' approach to employees communicates to these employees that they are worthy of investment, which stimulates employees' self-expectations, resulting in greater motivation and increased effort with higher achievements and more employee development as a consequence. Higher achievement and enhanced development confirm leaders' initial high expectations; see Figure 1.

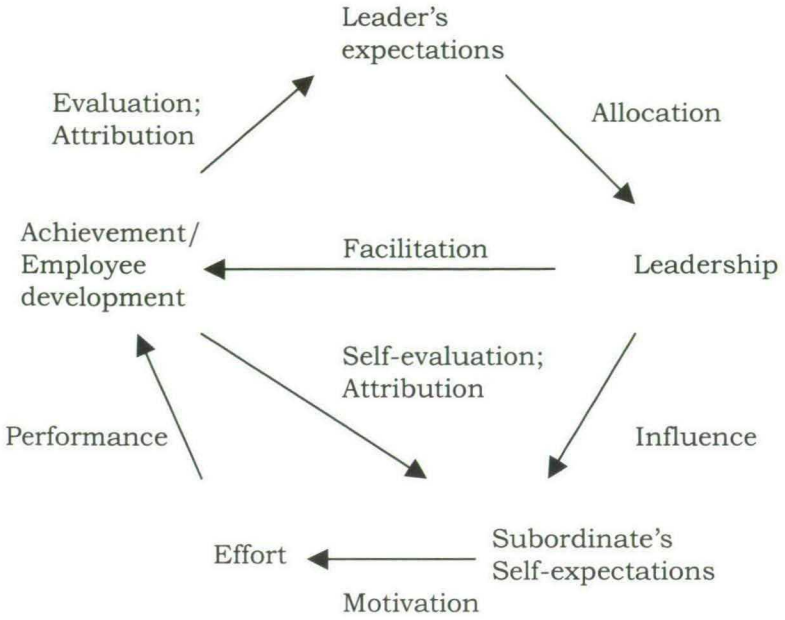

Figure 1: Self-fulfilling prophecy at work.

Inspired by the Pygmalion theory and driven by the desire to gain insight into how leaders may guide employee development effectively, we formulated several questions that guided this thesis:

1. Which employees engage in development activities?
2. Do leaders' expectations relate to employees' development behavior?
3. What leadership characteristics relate to leaders' expectations?
4. How do these leadership characteristics relate to employee development?
5. What conditions affect the relationship between leadership characteristics and employee development?
6. How stable are leaders' expectations of employees; can these expectations be changed?

It was expected that the answers to these questions would lead to recommendations for effective leader guidance of employee development and to a better understanding of leadership and, particularly, the Pygmalion effect in organizations.

Several empirical studies were conducted to find answers to these questions. In each chapter, the theoretical and practical implications of the presented studies are discussed. In the study reported in *Chapter 1,* we asked what leadership characteristics relate to leaders' expectations and which of these leadership characteristics relate to employee development? We considered the following leadership characteristics based on the Pygmalion theory and other leadership literature: leader-member exchange (LMX), the setting of specific goals, the setting of difficult goals, providing learning opportunities, feedback, and inspirational leadership. It was hypothesized that all these leadership characteristics mediated the relationship between leaders' expectations and employee development. The results showed that leaders' expectations were related to all of these leadership characteristics, and the setting of specific and difficult goals and providing learning opportunities were related to employee development.

In the study presented in *Chapter 2*, we tried to find out which employees engage in development activities. Based on literature on personal initiative, it was hypothesized that high initiative employees (employees with a self-starting approach to work that goes beyond what is formally required) more often engage in development activities as compared to low initiative employees. This relationship was explained by mediation through employees' self-efficacy (individuals' beliefs in their ability to be successful) and attitudes toward development activities. In addition, we hypothesized that social pressure was positively related to employee development and that this relationship was less strong for higher initiative employees. The results showed that personal initiative was positively related to self-efficacy and attitudes toward development activities and that these three variables together with social pressure were positively related to employee development. Personal initiative did not moderate the relationship between social pressure and employee development.

In the study reported in *Chapter 3*, we explored several conditional factors that may affect the relationships of organizational and leader support (offering feedback and providing learning opportunities) with employee development. It was hypothesized that job satisfaction (dissatisfied employees

use the support to leave the organization) and self-efficacy (based on the plasticity theory: low self-efficacy employees are more susceptible and malleable to support) moderated the relationships of the support variables with employees' attitudes toward development activities and with employee development. We also thought that organizational and leader support are mutually reinforcing in their relationship with employee development. According to our results, job satisfaction moderated the relationship between providing learning opportunities and employee development positively in some organizations and negatively in most others. Self-efficacy moderated the relationship between offering feedback and employee development negatively. Finally, organizational support and providing learning opportunities interacted negatively.

In the study presented in *Chapter 4*, we discussed how the relationships of leaders' feedback and the setting of specific and difficult goals with employee development might vary under different LMX conditions using the social exchange theory. Results confirmed the hypothesized mediation of the relationship between feedback and employee development by specific and difficult goals. Data also supported LMX moderation of the relationships between feedback and employee development, between feedback and setting difficult goals, and between setting difficult goals and employee development. LMX did not moderate the relationships between feedback and specific goals or between specific goals and employee development.

In the study presented in *Chapter 5*, we dealt with how leadership characteristics relate to employee development. Based on literature concerning the Pygmalion effect and leaders' influence on employees' self-efficacy, it was hypothesized that employees' self-efficacy mediated the relationships of several leadership characteristics (such as LMX, setting specific goals, setting difficult goals, feedback, and inspirational leadership) with employee development. Data suggested that setting specific and difficult goals was directly and positively related to employee development; LMX was indirectly and positively related to employee development via employees' self-efficacy; feedback was indirectly and negatively related to employee

development via employees' self-efficacy; and inspirational leadership was related to neither employee development nor to employees' self-efficacy.

In the study reported in *Chapter 6*, several strategies were discussed to raise leaders' expectations of employees who are already known to leaders for some time. In a quasi-field experiment, training for leaders was provided designed to raise leaders' expectations of employees by questioning the validity of these expectations, viewing employees from a learning perspective, focusing on employees' self-efficacy, and offering leaders tools to initiate employee learning. The results suggested that leaders' expectations are not fixed. While leaders' expectations in the experimental condition rose, those in the comparison condition fell.

In the study presented in *Chapter 7*, we addressed whether some of the major findings concerning leaders' guidance of employee development also apply to other employee attitudes and behaviors. The results suggested that the Pygmalion effect extends beyond employee development to altruistic behavior, creative behavior, performance, and job satisfaction. We also found that self-efficacy, job satisfaction, and LMX moderate the relationships of the setting of specific and difficult goals with employees' altruistic behavior, creative behavior, and performance.

Finally, in *Chapter 8,* we tried to answer the questions raised in the introduction. We deduced from the first seven chapters that employees who engage in development activities more frequently have a more self-starting, proactive approach to work (personal initiative), a higher level of self-efficacy, and more positive attitudes toward development activities. They are younger, more highly educated, and slightly more men than women engage in development activities. Also, they feel themselves to be more strongly supported by the organization, they feel more social pressure to engage, and their leaders set specific and difficult goals and provide learning opportunities more often. Concerning the Pygmalion effect, leaders' expectations do not seem to be fixed. They are positively related to employee development as well as to all leadership characteristics, suggesting that leaders do all they can to make their expectations come true. Setting specific and difficult goals and providing learning opportunities seem to be key

instruments to stimulate employee development. Job satisfaction, self-efficacy, and LMX are moderating conditions for leaders' guidance of employee development. Our findings are summarized in Figure 1 in Chapter 8. That our findings were generally stable across organizations and that these organizations were so different in character, made us believe that they reflect general phenomena that probably apply to many other civil organizations. Additional analyses in Chapter 7 suggested that the major findings regarding employee development reflect leader–employee interaction patterns relevant to various employee behaviors and these patterns probably do not depend on the type of civil organization.

SAMENVATTING

Medewerkers die zich ontwikkelen kunnen bijdragen aan het snel inspelen van een organisatie op haar veranderende omgeving. In het voorliggende proefschrift wordt onder ontwikkeling verstaan het participeren in verschillende vormen van leeractiviteiten op of buiten het werk. Deze activiteiten hebben een langer termijnperspectief dan het volgen van één enkele training, en kunnen uitmonden in het doorlopen van een carrière en het maken van persoonlijke progressie. Voorbeelden van leeractiviteiten zijn het volgen van een training of cursus, het verrichten van taken binnen of buiten het takenpakket, waarvan de medewerker leert, en het plannen en realiseren van een carrière. Het wordt algemeen verondersteld dat direct leidinggevenden in staat zijn de ontwikkeling van medewerkers te stimuleren. Echter, in de meeste gevallen hebben onderzoekers zich gericht op een algemene ondersteuning van leidinggevenden, waardoor het niet helemaal duidelijk is wat leidinggevenden precies moeten doen voor een effectieve begeleiding. Het doel van het voorliggende proefschrift was het verkrijgen van meer inzicht in hoe direct leidinggevenden de ontwikkeling van medewerkers zo effectief mogelijk kunnen stimuleren.

Voor het bestuderen van de begeleiding van de ontwikkeling van medewerkers door leidinggevenden hebben wij ons laten inspireren door de Pygmalion-theorie. Deze theorie stelt dat verwachtingen van leidinggevenden over medewerkers de drijvende kracht zijn achter de prestaties en de ontwikkeling van medewerkers. Hoge en lage verwachtingen vervullen zichzelf: leidinggevenden gedragen zich op zo'n manier dat hun verwachtingen worden bevestigd. De theorie gaat ervan uit dat leidinggevenden het gedrag van medewerkers zowel direct als indirect beïnvloeden. Wat betreft de directe beïnvloeding creëren leidinggevenden in het geval van hoge verwachtingen optimale omstandigheden, waardoor medewerkers in staat worden gesteld beter te presteren en zich meer te ontwikkelen. Bij lage verwachtingen verzuimen leidinggevenden de omstandigheden te optimaliseren. De indirecte beïnvloeding heeft betrekking op de wijze waarop leidinggevenden conform hun

verwachtingen de medewerkers benaderen, en door deze benadering communiceren zij of medewerkers het waard zijn om in te investeren, wat de zelfverwachting van medewerkers beïnvloedt. Bij hogere verwachtingen van leidinggevenden, en dientengevolge hogere zelfverwachtingen, zijn medewerkers meer gemotiveerd en leveren een grotere inspanning, wat betere prestaties en meer ontwikkeling tot gevolg heeft. Betere prestaties en meer ontwikkeling bevestigen de hoge verwachtingen van leidinggevenden, zie Figuur 1.

Figuur 1: Zichzelf vervullende verwachtingen op het werk.

Geïnspireerd door de Pygmalion-theorie en de wil om meer inzicht te verkrijgen in hoe leidinggevenden de ontwikkeling van medewerkers zo goed mogelijk kunnen begeleiden, zijn enkele vragen geformuleerd waarop aan de hand van dit proefschrift een antwoord is getracht te geven:

1. Welke medewerkers participeren in leeractiviteiten?
2. Relateren de verwachtingen van leidinggevenden aan het ontwikkelgedrag van medewerkers?
3. Welke leiderschapskenmerken zijn gerelateerd aan de verwachtingen van leidinggevenden?

4. Hoe zijn deze leiderschapskenmerken gerelateerd aan de ontwikkeling van medewerkers?
5. Welke condities modereren de relatie tussen de leiderschapskenmerken en de ontwikkeling van medewerkers?
6. Hoe stabiel zijn de verwachtingen van leidinggevenden ten opzichte van medewerkers; kunnen deze verwachtingen worden veranderd?

Met het vinden van antwoorden op deze vragen is getracht tot aanbevelingen te komen voor een effectievere begeleiding van de ontwikkeling van medewerkers en tot een beter begrip van de interactie tussen leidinggevenden en medewerkers en meer in het bijzonder het Pygmalion-effect in organisaties.

Verschillende empirische studies zijn uitgevoerd voor de beantwoording van deze vragen. In elk hoofdstuk wordt een studie gepresenteerd en worden de theoretische en praktische implicaties van de bevindingen besproken.

In de studie in *Hoofdstuk 1*, was de centrale vraag welke leiderschapskenmerken zijn gerelateerd aan de verwachtingen van leidinggevenden en welke van de leiderschapskenmerken zijn gerelateerd aan de ontwikkeling van medewerkers. De volgende leiderschapskenmerken waren in de studie meegenomen: de leider-medewerker uitwisselingsrelatie (LMX), het stellen van specifieke en moeilijke doelen, ruimte geven voor leeractiviteiten, feedback en inspirerend leiderschap. De hypothese luidde dat de verwachtingen van leidinggevenden via al deze leiderschapskenmerken relateren aan het ontwikkelgedrag van medewerkers. De resultaten lieten zien dat de verwachtingen van leidinggevenden positief gerelateerd zijn aan alle leiderschapskenmerken en dat het stellen van specifieke en moeilijke doelen en het geven van ruimte voor leeractiviteiten positief gerelateerd zijn aan de ontwikkeling van medewerkers.

Met de studie in *Hoofdstuk 2* is getracht een antwoord te vinden op de vraag welke medewerkers participeren in ontwikkelactiviteiten. Gebaseerd op de literatuur over het concept "persoonlijk initiatief" was de verwachting

dat medewerkers die gewoon zijn inititief te nemen (medewerkers met een zelfstartende benadering van het werk die verder gaat dan hun formele taakomschrijving) zich meer bezighouden met hun ontwikkeling dan medewerkers die minder vaak initiatief nemen. Deze relatie werd verklaard door mediatie van het vertrouwen van medewerkers in hun vermogen om handelingen succesvol te verrichten en een positieve houding ten opzichte van ontwikkelactiviteiten. Daarnaast was de verwachting dat sociale druk positief gerelateerd is aan het verrichten van leeractiviteiten en dat deze relatie minder sterk is voor medewerkers die gewoon zijn veel initiatief te nemen. De resultaten lieten zien dat persoonlijk initiatief positief gerelateerd is aan het vertrouwen van medewerkers in de eigen capaciteiten en aan hun houding ten opzichte van leeractiviteiten en dat deze drie variabelen samen met sociale druk positief gerelateerd zijn aan de ontwikkeling van medewerkers. De relatie tussen sociale druk en de ontwikkeling van medewerkers is hetzelfde voor medewerkers die veel en weinig initiatief nemen.

In de studie in *Hoofdstuk 3* is onderzocht of de relatie van de ondersteuning van de organisatie en de leidinggevenden met de ontwikkeling van medewerkers anders is voor verschillende conditionele factoren. De verwachting was dat ondersteuning sterker gerelateerd is aan de ontwikkeling van medewerkers naarmate medewerkers ontevredener zijn, omdat zij meer mogelijkheden krijgen de organisatie te verlaten. Daarnaast werd verondersteld (gebaseerd op de plasticiteitstheorie) dat medewerkers met minder zelfvertrouwen ontvankelijker zijn voor ondersteuning. Tenslotte is onderzocht of de ondersteuning van de organisatie en van de leidinggevenden elkaar versterken in de relatie met de ontwikkeling van medewerkers. De resultaten lieten zien dat tevredenheid met het werk de relatie tussen het geven van ruimte om leeractiviteiten te ondernemen en de ontwikkeling van medewerkers positief modereert in sommige organisaties en negatief in de meeste andere. Ondersteuning werd gevonden voor de plasticiteitstheorie; voor medewerkers met minder vertrouwen in de eigen capaciteiten was de relatie tussen feedback van de leidinggevenden en het ontwikkelgedrag

sterker. Tenslotte, kwam naar voren dat de ondersteuning van de organisatie en het geven van ruimte voor leeractiviteiten negatief interacteerden in de relatie van deze beide vormen van ondersteuning met de ontwikkeling van medewerkers.

De studie in *Hoofdstuk 4* ging over de relaties tussen de feedback van leidinggevenden, het stellen van specifieke en moeilijke doelen, het ontwikkelgedrag van medewerkers en de kwaliteit van de relatie tussen leidinggevenden en medewerkers (LMX). Op basis van zelfregulatietheoriën werd verondersteld dat de relatie tussen feedback en de ontwikkeling van medewerkers verloopt via het stellen van specifieke en moeilijke doelen en op basis van de sociale uitwisselingstheorie luidde de veronderstelling dat de sterkte van deze relaties afhankelijk is van de LMX-relatie. De resultaten bevestigden de hypothese dat de relatie tussen feedback en de ontwikkeling van medewerkers verloopt via het stellen van specifieke en moeilijke doelen. Verder bleek dat de relaties tussen feedback en de ontwikkeling van medewerkers, feedback en het stellen van moeilijke doelen en het stellen van moeilijke doelen en de ontwikkeling van medewerkers sterker is naarmate de LMX-relatie beter is. Moderatie-effecten werden niet gevonden voor de relaties tussen feedback en specifieke doelen en tussen specifieke doelen en de ontwikkeling van medewerkers.

In *Hoofdstuk 5* is behandeld hoe de leiderschapskenmerken gerelateerd zijn aan de ontwikkeling van medewerkers. Gebaseerd op de literatuur over het Pygmalion-effect en de invloed van leidinggevenden op de zelfverwachtingen van medewerkers werd verondersteld dat de relatie tussen de leiderschapskenmerken (LMX, het stellen van specifieke en moeilijke doelen, feedback en inspirerend leiderschap) en de ontwikkeling van medewerkers gaat via het vertrouwen van medewerkers in de eigen capaciteiten voor het succesvol handelen. De data suggereerden dat het stellen van specifieke en moeilijke doelen direct en positief gerelateerd is aan de ontwikkeling van medewerkers; LMX is indirect en positief gerelateerd aan de ontwikkeling van medewerkers via het vertrouwen in de eigen capaciteiten; feedback is indirect en negatief gerelateerd aan de

ontwikkeling van medewerkers via het vetrouwen in de eigen capaciteiten; inspirerend leiderschap heeft noch een relatie met het zelfvertrouwen in de eigen capaciteiten noch met de ontwikkeling van medewerkers.

In de studie in *Hoofdstuk 6* worden enkele strategieën besproken die zouden kunnen leiden tot een verhoging van de verwachtingen van leidinggevenden over medewerkers die zij reeds enige tijd kennen. Door de juistheid van de verwachtingen van leidinggevenden in twijfel te trekken, naar medewerkers te kijken vanuit een lerend perspectief, te focussen op het belang van het vertrouwen van medewerkers in hun eigen capaciteiten en door het aanbieden van enkele instrumenten om de ontwikkeling van medewerkers in gang te zetten, is getracht de verwachtingen van een groep leidinggevenden te verhogen in een quasi-experiment. De resultaten suggereerden dat de verwachtingen van leidinggevenden geen vaststaand gegeven zijn. De verwachtingen van leidinggevenden in de experimentele conditie stegen en die van leidinggevenden in een vergelijkingsconditie daalden.

In *Hoofdstuk 7* is bekeken of enkele van de belangrijkste bevindingen betreffende de begeleiding van de ontwikkeling van medewerkers door leidinggevenden ook van toepassing zijn op andere houdingsaspecten en gedrag van medewerkers. De resultaten suggereerden dat het Pygmalion-effect ook opgaat voor altruïstisch gedrag, creatief gedrag, prestaties en tevredenheid van medewerkers. Ook bleek uit de analyses dat het vertrouwen in de eigen capaciteiten, tevredenheid met het werk en een LMX-relatie de relaties tussen het stellen van specifieke en moeilijke doelen en altruistisch gedrag, creatief gedrag en prestaties modereerden.

Tenslotte is in *Hoofdstuk 8* getracht de vragen te beantwoorden die in de inleiding zijn gesteld. Uit de eerste zeven hoofdstukken valt af te leiden dat de medewerkers die zich ontwikkelen vaker beschikken over: een zelfstartende proactieve benadering (persoonlijke initiatief) van het werk, meer vertrouwen in de eigen capaciteiten en een positievere houding ten opzichte van ontwikkelactiviteiten. Daarnaast zijn zij jonger, iets hoger opgeleid, en houden mannen zich iets vaker bezig met ontwikkeling dan vrouwen. Verder voelen zij zich sterker ondersteund door de organisatie en

ervaren zij meer druk van de omgeving om zich te ontwikkelen. Hun leidinggevenden stellen meer specifieke en moeilijke doelen en geven hen meer mogelijkheden om tijd te besteden aan hun ontwikkeling. Wat betreft het Pygmalion-effect lijkt het erop dat de verwachtingen van leidinggevenden ten opzichte van medewerkers niet volledig vaststaan. De verwachtingen van leidinggevenden zijn positief gerelateerd aan de ontwikkeling van medewerkers en aan alle leiderschapskenmerken die in de studies zijn meegenomen. De resultaten suggereren dat leidinggevenden er alles aan doen om hun verwachtingen te doen uitkomen. Het stellen van specifieke en moeilijke doelen en het geven van ruimte voor leeractiviteiten lijken de belangrijkste instrumenten van leidinggevenden om de ontwikkeling van medewerkers in gang te zetten. Tevredenheid met het werk, vertrouwen in de eigen capaciteiten en de LMX-relatie zijn belangrijke condities voor de effectiviteit van de begeleiding van de ontwikkeling van medewerkers door leidinggevenden. Figuur 1 in Hoofdstuk 8 geeft een samenvattende interpretatie van de bevindingen.

Het feit dat de resultaten over het algemeen stabiel waren over zoveel verschillende typen organisaties doet vermoeden dat de bevindingen gelden voor veel andere civiele organisaties. De extra analyses in hoofdstuk 7 suggereren dat de belangrijkste bevindingen betreffende de begeleiding van de ontwikkeling van medewerkers door leidinggevenden betrekking hebben op een algemeen interactiepatroon tussen leidinggevenden en medewerkers, welke relevant is voor meerdere soorten gedrag in verschillende typen organisaties.

To meet today's fast internal and external organizational changes, many organizations may benefit from investment in the quality of their personnel by stimulating employee development. The goal of the present thesis was to gain insight into how leaders may guide employee development effectively. Based on theoretical and empirical considerations, answers are provided to questions such as which employees engage in development activities, what should leaders do to guide employee development, under what conditions is leader guidance most effective, and when are leaders willing to invest in employees? In each chapter, relevant theory is discussed, and an empirical study based on a sample of a broad range of different types of organizations is reported. The stability of the findings across organizations makes the many theoretical and practical implications relevant for theory concerning employee development and leadership and for practitioners who want to stimulate employee development.